




Digitized by the Internet Archive
in 2016

<https://archive.org/details/greenscene1316edby>





Landscaping for Security:
Burglar-proofing your home
with plants. See page 27.

THE
**green
scene**

HORTICULTURE IN THE DELAWARE VALLEY
SEPTEMBER • OCTOBER • 1984 \$1.50



in this issue



3. Why Perennials?

Jean Byrne

4. A Solar Greenhouse: A Not Entirely Sunny Story with a Happy Ending

Carroll R. Wetzel

9. The Business of Propagating at Winterthur

Marnie Laird

12. Please Eat the Centerpiece: One for the Guinness Book of Records

Ed Lindemann

14. Grain Farming: More Than It's Cracked Up To Be

Marjorie Hunt

17. A Glistening Carnivorous Jewel: *Drosera* x Nagamoto

Patricia A. Knauff

19. Happy Accidents: Hardy Houseplants in the Garden

Arthur O. Tucker

23. Natural Selections: Arrangements for Public Places

Lucie B. Steele

27. Landscaping for Security: Burglar-Proofing Your Home with Plants

Amalie Adler Ascher

30. The Sweet Scent of Jasmines

Franklin J. Niedz

33. Growing Interests

33. Letters to the Editor

35. Classified Advertising

Front cover: *Poncirus trifoliata*
photo by Pamela Harper

Back cover: photo by Anne Wetzel

Volume 13, Number 1

September October 1984

THE PENNSYLVANIA HORTICULTURAL SOCIETY

325 Walnut Street, Philadelphia, Pa. 19106

Telephone: 215-625-8250

Horticultural Hotline: 215-922-8043

Henry H. Reichner, Jr. *President*

Jane G. Pepper *Executive Director*

Jean Byrne *Editor*

PUBLICATIONS COMMITTEE:

Adele G. Greenfield *Chair*

Kathryn S. Andersen

Judy Foley

Lynn Kippax

Darrel Apps

Charles W. Heuser

James J. McKeen

L. Wilbur Zimmerman

Designer: Julie Baxendell, Baxendell • Lambeck Associates

Separations: Lincoln Graphics **Printer:** Judson Printing

THE GREEN SCENE, (USPS 955580) Volume 13, No. 1, published bimonthly, January, March, May, July, September, November, by the Pennsylvania Horticultural Society, a non-profit membership organization at 325 Walnut Street, Philadelphia, PA 19106. Subscription: \$8.50 - Single Copy: \$1.50. Second class postage paid at Philadelphia, PA 19106. • **POSTMASTER:** Send address change to THE GREEN SCENE, 325 Walnut Street, Philadelphia, PA 19106.

• Pennsylvania Horticultural Society, 1984

Green Scene subscriptions are part of the membership benefits for:

Pennsylvania Horticultural Society

Maryland Horticultural Society

Frelinghuysen Arboretum

Skylands Arboretum

Blithewold Gardens and Arboretum

17360



WHY PERENNIALS?

 by Jean Byrne

At the beginning of our 13th year of publishing, we still find a lot to talk about. As a matter of fact, in our July issue of *Green Scene* we had so much to say that we added four pages and dropped our editorial. The question we posed in the unpublished editorial was "Why the burst of interest in perennials at this particular time."

The Society was aware of the trend toward growing perennials for some time, but in August 1982 during discussions with nurserymen, when Jane Pepper and Ed Lindemann were visiting exhibitors for the 1983 Flower Show, it seemed more than a trend. It was 1982 when we began to prepare for the 1984 issue on perennials.

Even as we worked on the issue, interest accelerated. In October 1983, the New York Botanic Garden held a one day meeting on "The New Perennials." It was so successful they are cosponsoring with the American Horticultural Society "Perennials: Plants for the 80s." The meetings, with the same agenda, will be held in New York, September 29 and in Mt. Vernon on October 13. Longwood Gardens held a week-long course on "Perennial Flowers," attended by 160 people from all over the United States. In July, the newly formed Perennial Plant Association held a highly successful symposium at Ohio State University. And on November 2nd, PHS, the Arthur Hoyt Scott Horticultural Foundation, the Pennsylvania State University and the Pennsylvania Nurserymen's Association are cosponsoring a symposium for professionals. We had requests for 800 additional copies of the perennial issue for distribution at some of these meetings.

We asked Darrel Apps, head of education at Longwood Gardens, how he accounted for the developing interest. Apps thinks that today's American gardeners are among the most sophisticated ever because they have traveled more, read more and are tuned in and affected by the larger world. Apps believes that over a period of time, the oil crisis and other general economic problems turned people to their own gardens for recreation. It was then they got bored with annuals and began planting perennials.

At the same time this interest was brewing among home gardeners, nurseryman Rob Montgomery believes that nurseries were sensitive to the growing sophistication of gardeners. He observed that the nature of perennials allowed the nurseries to act rapidly on their perceptions, and over the last two or three years, in an extraordinary marketing feat, nurseries have been able to shift from about 80 varieties to more than 800, and still counting. And in spite of the oddly fluctuating weather patterns, perennials have shone in this area, coming through the hard winters and droughty summers.


We hope that our July issue answered some of your questions. As we prepared for it, we thought of people like Emmy Harstshorne of Linwood, New Jersey who wrote us about a picture of a beautiful perennial garden that appeared in an earlier issue of *Green Scene*:

"I imagine the picture was taken during the first weeks in June, but how does it look in July, August, September. All the lovely iris, peonies, daisies, poppies, lilies seem to be holding hands in a beautiful spring dance, but again what about later. I don't see any provisions planned for the summer months, and have been trying year after year for a continuation of beauty in my perennial border, and no matter how I try, I cannot achieve it."

We hope you can now, Emmy Harstshorne.

A Solar Greenhouse

A not entirely sunny story with a happy ending

 by Carroll R. Wetzel



photos by Edmund B. Gleichert, Jr.

Carroll Wetzel removes lid from water tanks. Phoebe Wetzel works with the potted plants on the bench. The vegetable bed is behind her.

4 The story of our greenhouse is largely one of tears, either of frustration or of rage, often of both, but one that appears after three years to have a happy ending. In the Northeast one should not lightly try to create a small solar greenhouse that (a) works, (b) blends aesthetically with the house to which it is attached and (c) provides space for the bulk water or rocks or whatever is expected to make it work and also for the assorted ornamentals and edibles that are its *raison d'être*. In our case the problem was complicated, as it turned out, by the innocent idea, that having selected water as the bulk, it would be nice to raise fish, not pretty fish to look at but large, delicious fish to scoop out for dinner.

Our first and overriding priority was an aesthetically blended unit of house and greenhouse. In this we were abetted by two highly knowledgeable young Canadian architects. They had moved their office

from Cambridge, Massachusetts to Prince Edward Island (in Maritime, Canada) where they had designed a large solar unit similar to our small one. It was financed largely, if not entirely, by the Canadian government. I don't know how they financed the one on Cape Cod.

We had sent the architects photographs of our place and rough designs made after a careful study of the problems and possible solutions. In response came a most helpful and friendly long letter, with masses of construction details and proposed materials in case we wished to do it inexpensively, but ending with the firm advice to forget the whole idea unless we were prepared to create something of the quality of our old stone house. A figure was mentioned. After a rather protracted state of shock we decided to go first class and today, three years after much trial and error, we have what we wanted.

So what have we? A lean-to greenhouse of thermopane glass facing slightly west of south in a protected angle of the house. It is 19 ft. long by 16 ft. deep, the inner six feet being an extension of a low roof with two opaque Skymaster skylights, and the outer 10 feet an anodized aluminum glass-to-ground lean-to by a well-known manufacturer. The inner 10 feet of floor area is at ground level, a step down from a door into the house. The outer six feet is a sunken area four feet below grade with a four-foot-deep growing bed of rich soil along the outer side and a typical greenhouse bench along the inner side. On the upper level against the back wall are three large and one small circular fiberglass tanks holding about 600 gallons of water; the larger tanks are 2½ ft. in diameter and 5 ft. high. The extended roof was designed to prevent direct rays of the sun from striking the water in the summer while permitting maximum expo-

sure in the winter. We wanted a year-round house and, as it turned out, we got one. The temperature in the greenhouse has never exceeded 90° F on the hottest summer days. Water, given a minimum bulk, is not only a stabilizing force for warmth, it is also a stabilizing cooling force in summer.

Around the outside of the foundation wall, 4 ft. deep, is two inches of styrofoam insulation. We had wanted four inches, but the builder couldn't believe it and got ahead of us, so an additional two inches was put in the growing bed along the outside wall and also at each end of the lower walk.

That is what we started with, far behind schedule through no fault of the builder. Winter was upon us. The wind whistled through unseen cracks, the water temperature in the tanks dropped more by night than the sun could raise it by day, even on sunny days. No vegetables would grow. Only the hardiest ornamentals were happy. The fish were decidedly unhappy, not enjoying wide diurnal swings in temperature.

correcting the water temperature

Determined to keep the fish alive at all costs, a 220-volt air heater and fan that had been installed in case it might be needed

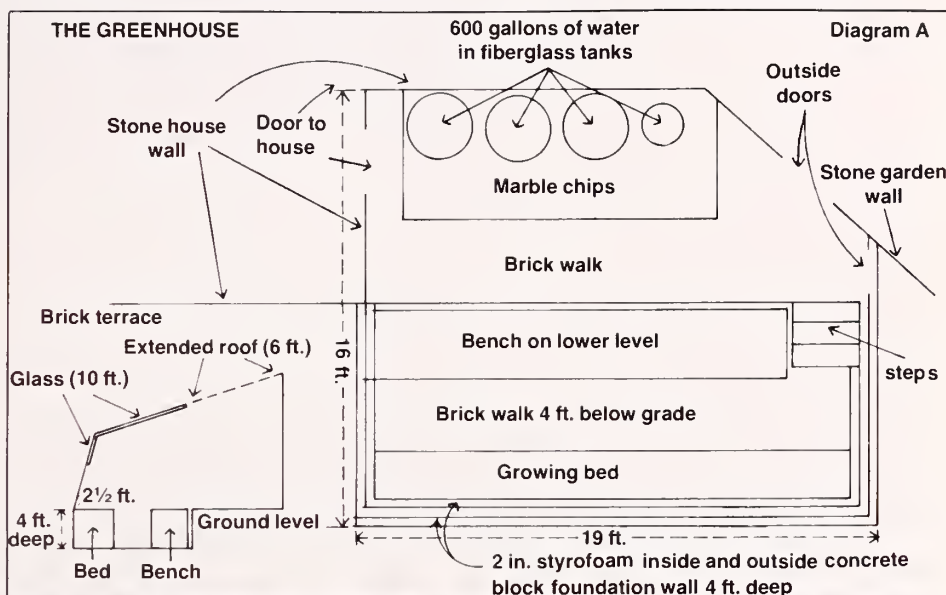
now and then, was run continuously. Some ornamentals behaved as though summer had arrived much too soon and put out masses of anemic little flowers. Others knew it couldn't be so and dropped whatever buds they had. Utter disaster, a whole winter of it, and not a cold one at that.

Today it is different. Our first corrective step was to install a system to raise the temperature of the water, rather like the

rooftop units used to heat household water (see diagram B). The firm, Solar Components Corp.,* that made the water tanks sells copper solar collector units 8 ft. long by 6 in. wide. The main body of water slowly circulates through all tanks by a system of siphons and a small pump.

continued

*Solar Components Corp., P.O. Box 237, Manchester, New Hampshire, catalog \$3.00.



The author outside the solar greenhouse. The bronze skylights help to diffuse the light.

The collectors increased the water temperature materially but, as experience showed, not nearly enough. The entire greenhouse needed added insulation, lots of it.

insulation

At about this time two new insulating products came to our attention. General Electric's double-wall ribbed version of its Lexan plate distributed by E. C. Geiger of Harleysville,** for greenhouse insulation. It can be cut to any shape, is slightly flexible and, with a little ingenuity, can be snapped into place between the aluminum frames inside a greenhouse. We put it on both ends. We could have covered the entire greenhouse but it is slightly opaque and would have cut our view. It will not fog with age as the old Lexan did.

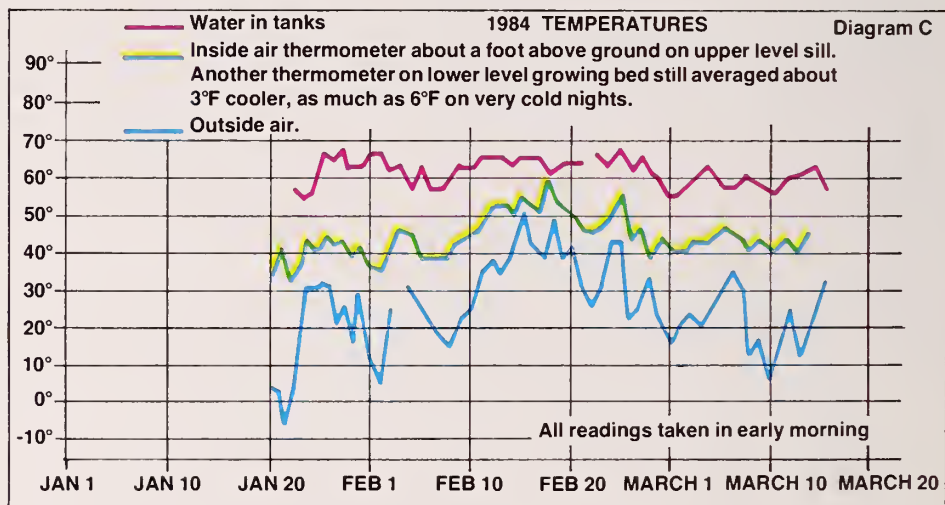
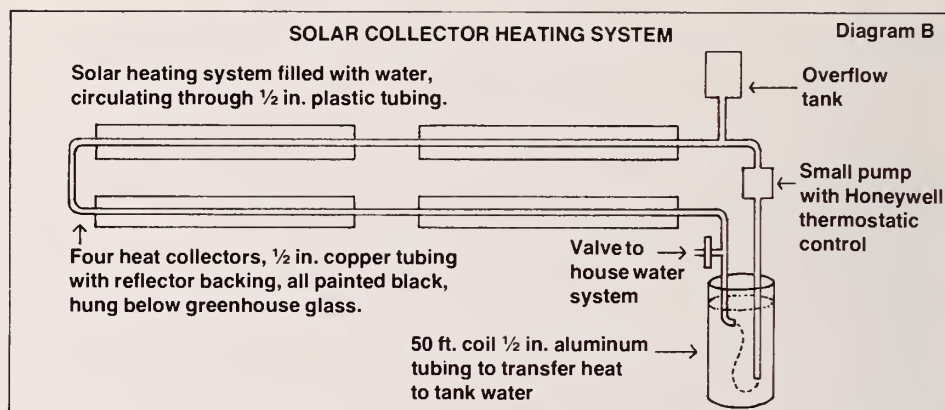
Then we added Insul-Rib, a new product also carried by Geiger: attached inflatable 4-in. tubes of thin 2-mil, clear, polypropylene, in various widths, the tubes running across the widths. It looks like inflatable campers' mattresses and can be cut to any length. It is kept inflated by a small air blower (a little experimenting showed that a hair dryer is too small). An ingenious system permits any number of sections side by side to be inflated by one blower.

Three 6-ft. side-by-side sections extend from just above ground level (above handles that open a row of windows) to just below arms at the top that open a vented section of glass the length of the greenhouse. The three sections hang over a wire along the angle of the front of the greenhouse like three sheets over a clothesline. When inflated the tubes stretch slightly to fit snugly over the entire length of the greenhouse and lie just under the solar collectors, providing about 4 in. of dead air space for excellent insulation. When deflated they hang limply, permitting heat to rise to the glass to melt snow. The material, being thin, may become brittle after a year's exposure to sunlight. It is intended for use as an inexpensive annual throw-away, primarily for the commercial greenhouse. Only time will tell how long ours will last.

Use T-Lok Poly Fasteners to install Insul-Rib. With T-Lok we recommend the stainless steel spring clip rather than the cheaper regular one. In a wooden greenhouse Insul-Rib can be stapled to laths for an



Water tanks under skylight receive direct sunlight in winter, diffused light in summer. The tank on the extreme right is the one shown in the sketch.



easy, quick installation.

The tanks should be covered to prevent excessive evaporation and unnecessary dissipation of heat that can be amazingly high. We use a double-wall ribbed clear plastic sheet made by Allied Chemical, similar to the Lexan double plate but with larger ribs, ergo more dead air space for insulation, and much cheaper. Its only disadvantage is that it is brittle and can crack if treated roughly or dropped.

For the same purpose, we created one inch of dead air space around each tank, but probably would recommend adding it later if wanted, as we did. A cylinder of identical material was slipped over each tank, 2 in. larger in diameter than the tank, that fitted snugly over a ring of 1-in. plastic tubing at the top and at the bottom of the tank. For proper light and heat ray penetration the identical material should be used although it may be thinner. The cylinder

**E. C. Geiger, Box 285, Rt 63, Harleysville, PA 19438-0332 Phone (215) 256-6511

should be made to a precise dimension to fit snugly over the plastic tubes.

other heat sources

Having now callously abandoned all pretense toward pure solar heat, we installed a soil-heating cable in a loop 6 in. below the surface of the growing bed, setting the thermostat in the high 40s. By this time, the third winter, a cold one, was well advanced. To our keen disappointment the light of the thermostat showing the heat to be on didn't blink off for two days. Then a strange thing happened. Only infrequently did the light go on again and then only briefly. The soil seems to need only a modest amount of supplementary heat. Our six cubic yards of lovely soil in the most exposed part of the greenhouse, most exposed to the sun as well as to the cold, was acting as a heat bank, helping the 600 gallons of water at the back. We have no way of allocating credit among all the improvements, but we do know that the total finally works well, as the graph of comparative temperatures shows. (See diagram C.)

Except for a few of the smaller more tender plants that probably should be on the warmer upper level, the ornamentals behaved as well as they ever had in our old heated greenhouse, and all winter the vegetables looked like a flower show exhibit, perhaps partly because they had a weekly watering from the rich water in the fish tanks. The powerful air heater was turned on only twice, once when the outside temperature was -6°F, and I lost my nerve, and once when the air tubes collapsed because the connection between the tubes and the blower parted. (A call to the manufacturer produced larger and stronger connectors just made and word that other users had had the same problem.)

Solar energy purists should not criticize too severely. I am told the air blower uses no more current than a 25-watt bulb. The little pump in the solar collector system cannot use much more. The soil-heating cable uses more, of course, but it seems to be on infrequently.

Perhaps this is the time to say a word to those who may wonder why we went ahead without taking more technical advice. Diligent search failed to uncover anyone in the Philadelphia area at that time whose experience could begin to compare with our young Canadian friends who had actually done it twice and watched it work for several years. Each problem is different and all the good answers can't be found in books, at least not yet. For example, one morning



A February harvest. Mustard cabbage in foreground, lettuce, rhubarb chard, two other varieties of lettuce, more rhubarb chard, parsley and other herbs.

after a bitterly cold and windy night, solid ice had formed on the dial of the soil thermometer, showing a soil temperature of 45°F. An air thermometer nearby registered 28°F. Six feet away another thermometer just above ground on the upper level read 34°F. Ten feet away a wall thermometer registered in the low 40s. The temperature in the water tanks was 55°F at noon and couldn't have been lower than 52°F early in the morning. We lost no plants. My point is simply that I doubt there are any universal answers for the small greenhouse except that they are all different and appropriate solutions must be found for each by careful watching, trial and error. Our few small tender plants that did not come through the winter as thriftily

as they might very likely were affected by an unusually cold December before the inflated tubes and the soil cable were installed rather than by the later brief brush with 28°F.

stalking fish in the solar greenhouse

Oh, yes, the fish. We have learned much and succeeded modestly if success is defined as eating your own fish and finding them sweet, delicious, and not bony. The fish are blue tilapia (*T. auera*), a fresh water tropical fish now grown for protein in parts of the Third World and much used in research in this country because it tolerates fairly wide environmental conditions. Anyone interested in aquaculture should write to Rodale Press, Inc., 33 E. Mission St.,

continued

Emmaus, PA 18049 for a copy of their informative 126-page book, *Home Aquaculture, A Guide to Backyard Fishfarming* (\$15) by Steve Van Gorder and Douglas Strange. Rodale Press maintains a 300-acre research farm with extensive greenhouses and an aquaculture unit. Part of the difficulty about our project was that people interested in greenhouses are invariably interested in plants, period; and people interested in aquaculture have been largely interested in fish, period, until fairly recently when research began in earnest in growing plants hydroponically in enriched fish water. I know of two places where the

Water, given a minimum bulk, is not only a stabilizing force for warmth, it is also a stabilizing cooling force in summer.

two have been melded. I believe with considerable success, but the two have been vastly larger than ours, appropriate for a community effort not for a small family unit. One of the two, briefly described in the second paragraph of this article, is no longer in existence. It was unique, providing year-round housing for people as well as for plants and fish in a solar climate. The Canadian government, I am told, believing after several years that the project had proved its feasibility, discontinued funding, not wishing to support a long term research project. The other on Cape Cod is still active. Both were built by The New Alchemy Institute in collaboration with Solsearch Architects, the two young architects mentioned earlier.

My only suggestion to those wishing to pursue the matter is to subscribe to *The New Alchemy Quarterly* (\$2.00 a copy), get a list of publications, including the annual journals (probably cheaper in the end to take an annual membership at \$35.00) and also take an annual membership of the Rodale Network at \$15.00 which provides a quarterly and copies of all research bulletins. Traditionally, Rodale has stayed with aquaculture and horticulture in two separate departments, although I believe the aquaculture unit is moving toward hydroponics as a use for the waste fish water. New Alchemy has tried to do it all from the beginning, which seemed to me to have produced a certain amount of backing and filling as to objective, and probably too little time. My repeated pleas for an answer to a letter asking advice brought only silence until I quit some years ago, although I still subscribe to the quarterly. Perhaps it is dif-

ferent today. (Addresses: Rodale Aquaculture Project, Box 323, R.D. 1, Kutztown, PA 19530; The New Alchemy Institute, 237 Hatchville Rd., East Falmouth, MA 02536.) Much research is being done at universities, but I can't guide one to it. Perhaps Libby Goldstein, director of Urban Gardening at the Philadelphia office of the Penn State County Extension Service, can answer some questions (215-276-5182).

Our water tanks are probably not ideal for growing fish. The tanks are 5 ft. high and 2½ ft. in diameter. Whether fish enjoy swimming vertically I do not know, but if the tanks were 5 ft. in diameter and perhaps 3 ft. deep the fish would be nearer to the floating pellets of food, which they need in addition to the algae that grow in the water, and probably more important, nearer to the splashers that maintain a high oxygen level in the water. Solar Components Corp. sells an off-the-shelf tank 5 ft. high and 58 in. in diameter.

check out suppliers

Now for the tears that were mentioned in the first sentence. We prefer simply to say that they arose largely in our relations with the greenhouse manufacturer. Perhaps the situation is different today but on the basis of our experience we suggest that anyone thinking of building a small efficient thermal greenhouse should, before deciding how to proceed, investigate thoroughly the larger well-known manufacturers. New firms are getting into the business, and we are told some of them are excellent, although most use redwood. For more information, contact the people listed at the end of the article.

Of course there were other tearful episodes, which in retrospect are more amusing than enraging. For example, moving what was left of 200 gallons of water and fish from a tank that sprang a leak one evening before we were to leave town early the next morning. Packing was delayed until the small hours. Or another occasion, when we were away our daughter came home at dinner time to find a little water and a lot of flapping fish in the bottom of another leaking tank, and a lot of water in places not intended to receive water. She called our builder team, two wonderful brothers, who came faster than an ambulance to an accident. They miraculously moved all fish to another tank without losing one. All tanks were later reinforced by an embarrassed and incredulous manufacturer.

Was it all worth it? Of course, we seem to have succeeded, at least for now, but for

several years we were not so sure. In retrospect would we do anything differently? We would make an intensive search for a manufacturer interested and knowledgeable in thermal greenhouses, and we would look carefully into the newer insulations. Beyond that we would lend a skeptical ear to all advice.

VEGETABLES AND ORNAMENTALS FOR THE SOLAR GREENHOUSE

Successful vegetables for winter use:

Lettuce: (special greenhouse varieties from Stokes Seeds Ltd., St. Catherine's, Ont.) Capitán, Ostinato and Grand Rapids Forcing, similar to our better summer lettuces.

Chinese cabbage

Rhubarb chard

Italian parsley (flat-leafed)

Tomatoes take up too much room for too little results and harbor white flies.

Mustard cabbage also grew well. We did not like it, although the aphids did.

As for flowers and house plants: all types of fibrous-rooted begonias seem to thrive both winter and summer in the greenhouse, as did the few hardy cyclamen I tried. Of the orchids, dendrobium and miniature cymbidium do well. *Camellia japonica* and *clivia* need to have some cold (not freezing) weather before being brought in. A *Daphne odora*, a Meyer lemon, several of the temperate jasmines and a ceanothus hybrid, also streptocarpus and both *Serissa foetida* 'Variegata' and 'Grandiflora' have bloomed well. *Hibiscus rosa-sinensis* sulks in the colder weather, but comes back with renewed vigor.

Phoebe M. F. Wetzel

INTERESTED IN BUILDING A SOLAR GREENHOUSE?

The Pennsylvania Horticultural Society suggests contacting

Thomas Bujak
423 Leconey Avenue
Palmyra, NJ 08065
(609) 829-3886

Mid-Atlantic Solar Energy Association
2233 Gray's Ferry Avenue
Philadelphia, PA 19146

Nancy Wiseman
(215) 545-2150

Solstice
3920 Manor Street
Philadelphia, PA 19128
(215) 487-3406

SunSpaces
Main & Walnut Streets
North Wales, PA 19454
(215) 699-3747 699-3933

●
Carroll R. Wetzel, a retired lawyer, designed his solar greenhouse himself. Wetzel was president of the Pennsylvania Horticultural Society from 1968-70. He is also past-president of the Library Company of Philadelphia.



Mist house, newly planted cuttings



Plants wintering in the lath house.

The Business of Propagating at Winterthur

 by Marnie Laird

The late Henry F. du Pont, founder of Winterthur Museum and Gardens, was not only an avid antiques collector, but also a dedicated horticulturist. Consequently Winterthur, tucked into a pocket of sheltering hills, is surrounded by beautiful gardens and stretches of towering woods and is considered to have one of the best examples of English style naturalistic woodland gardens in this country.

The responsibility for maintaining this landscape with its wealth of plants rests with the Gardens Division, headed by Walter Petroll. The greenhouse department, which plays an important part in the overall Gardens Division, supplies year-round all the fresh flowers for the Museum's flower arrangements. In addition, the greenhouse department also propagates all decorative plants for public areas and replacement plants for Winterthur's gardens.

quality, costs and marketing

Maintaining the quality and smooth operation of the Winterthur complex is an expensive proposition these days. In Mr. du Pont's era 18 men worked in the cut flower garden alone with additional employees for the grounds, greenhouses and other garden areas. Today, volunteers help fill the reduced rank of staff gardeners.

In 1977, Walter Petroll started to sell excess stock from the museum's greenhouses and nurseries as part of a public outreach program. This surplus industry has grown into a full-time business. In 1981, the Plant Shop opened and soon afterwards, 15,000 copies of the Winterthur Plant List, a mini low-key catalog, were printed and mailed to Friends of the Museum and to members of the Winterthur Guild.

Anticipating increased sales stimulated
continued

by the Plant Shop and the Winterthur Plant List, Petroll organized a propagation program. At the present time, thousands of plants in various stages of development attest to the success of the program. Meanwhile, the people in the Plant Shop and Gardens Divisions, encouraged by the enthusiastic reception of the Winterthur Plant List, distributed in January '84 250,000 copies of a Gift and Garden Sampler.

Winterthur's decision to introduce or to disseminate exceptional plants to the public has proved a wise merchandising policy; response to the Sampler has exceeded their greatest expectations. Plant offerings in the Sampler range from the 10-in. colchis ivy (*Hedera colchica*) to the dawn redwood (*Metasequoia glyptostroboides*), which can reach 100 ft. in height. The three azaleas listed for sale, the *Rhododendron mucronatum* 'Winterthur,' 'Magnifica,' and 'Miss Susie,' are from Mr. du Pont's famous collection and are not available elsewhere.

Robert Curtis, who was hired as marketing propagator in anticipation of sales from *The Sampler*, works with a full-time employee and many willing volunteers, including retired corporate executives and housewives. One group of volunteers, members of the Garden Club of Wilmington, prepares cuttings during a week in the spring and early summer. Six to eight weeks later they spend another week potting up the rooted cuttings. Bob Curtis is up and out early on the spring mornings the Garden Club members are scheduled to work for he must take all the cuttings that they, in turn, will propagate. He carefully checks the new growth on the shrubs and trees needed for propagation. Samples of that year's growth are bent back until they snap. When the Club members arrive for work at 9:00 a.m., he is ready with enormous yard bags, holding 1,000 or more cuttings: boxwood, viburnum, rhododendron, native and evergreen azaleas and other plants.

where the volunteers come in

In a large room the volunteers carefully strip the leaves from the bottom of the 3-in. to 5-in. cuttings, wound them with a sharp knife and dip them into Woods Rooting Compound, a liquid dip. Next, the cuttings are taken into the large mist house adjoining the potting shed. This room contains long benches filled with a rooting mixture of sand and peat. They insert the cuttings into the mixture in even rows, carefully labelling them according to variety. The benches

are watered with automatic misters. Every two weeks the cuttings are drenched with Ban-Rot, a fungicide. Six to eight weeks later, the volunteers return to pot up the now rooted cuttings in quart containers, except for the small azaleas, which go into 3-in. pots. Success rates range from 100% for boxwood to only about 40% for the native azaleas. Native azaleas aren't widely grown commercially because they are difficult to propagate. On the other hand, the evergreen azaleas have about a 90% success rate.

When the Club members arrive for work at 9:00 a.m., he is ready with enormous yard bags, holding 1,000 or more cuttings: boxwood, viburnums, rhododendrons, native and evergreen azaleas and other plants.

The newly rooted cuttings are placed in a cold (35°-40°F) greenhouse for their first winter. After the first winter, they are transplanted into larger containers and the hardy plants are left out in the lath house all year. The lath house sits on a hilltop some distance from the main greenhouse compound. Lined with concrete open pits, it is open on all sides but does have a lattice roof made from snow fencing. After the plants are frozen, they are tipped over on their sides and covered with sheets of the insulator, microfoam,* which prevents alternate thawing and freezing, and over that a sheet of polyethylene. Rodent bait is sprinkled around the pots before covering to discourage mice and other pests.

The smaller, less hardy plants are placed in cold frames. The glass sashes are closed and covered with microfoam. William E. Brumback of the New England Wildflower Society deserves credit for the use of microfoam insulation in the cold frames. Before consulting him more than half the plants in the frames were lost from freezing. After insulating the frames with microfoam, plant loss was reduced to almost zero. Here, too, layers of polyethylene are placed over the microfoam. Thus, snugly insulated from the winter's cold, the plants emerge the following spring in beautiful

shape. After 20 months, the plants are ready for sale.

flowers for indoor and outdoor decorating

Volunteers also assist with growing cut flowers and plants for outdoor decoration. In the spring, the big job is potting up seedlings for the cut flower garden. The smaller greenhouses hold plants in various stages of development. One contains benches lined with rows of 5-in. pots of zonal geraniums, which will be used to decorate outdoor areas and to tempt buyers in the Plant Shop. Another dazzles the visitor with its floor to ceiling wall of winter flowering sweet peas rampantly climbing the string netting. Their perfume sweetens the air of the entire house. Brightly colored gerberas nod stiffly from a distant bench. Other houses contain benches of flowering snapdragons in various colors. One thousand are grown from seed each year. Other rooms contain benches of stock in masses of color. One thousand of these are also started from seed annually. There are benches of calendulas, marguerites, and browallia; all of this a spectacular sight for a visitor on a chilly late March morning. The blooms are for the Museum's flower arrangements.

Besides helping to maintain the cutting garden in the summer, the volunteers grow approximately 500 chrysanthemums needed for fall decorations around the Museum. These mums are propagated annually from the stock plants of the same type and color Mr. du Pont used to grow. Some of the cultivars are: 'Powder River,' a double white; 'Coppersmith,' a coppery bronze; 'Little One,' a canary yellow button; 'Sun Loving,' a bright yellow pompom; and 'Daphne,' a cascade type in both pink and white. The stock plants are kept in cold frames until February 1 when they are brought into the greenhouses to be forced into growth. Cuttings are taken near the end of March and potted into 3-in. peat pots. Later, they are repotted into the final 8-in. mum pans. Readyng these plants is a time-consuming business requiring much pinching, staking and tying.

Fall finds the volunteers starting the thousands of seeds ordered to insure an adequate supply of cut flowers for the winter. Bulbs such as narcissus, tulips, and freesias are forced into bloom, also. The freesia bulbs are dried off and successfully forced again in subsequent years. The early winter months are spent getting

*Microfoam is a polypropylene foam packaging material used for cushioning, padding, filling, insulating and surface protection of furniture, electronic materials, etc. It is distributed by Ametek Microfoam Division in Chadds Ford to packaging supply houses in large bulk and is no longer available at garden supply centers.



Marigolds in the cold frames

ready for the Yuletide Tour, a major event on the Winterthur calendar. Repotting tropicals and cleaning greenhouses occupies the latter part of the winter.

Above and beyond all this work, the propagation area continues to insure all the replacement plants for Winterthur's extensive grounds. In addition, Winterthur's active garden-propagation department has become known in national horticultural circles. New cuttings and seeds from China and from arboretums throughout the U.S. are sent to Winterthur for evaluation for future use in gardens. Amateur hybridizers also bring plants for evaluation.

The adage "necessity is the mother of invention" has more than proven itself true in the ways Winterthur has risen to the challenge of inflation. The merchandising department has worked overtime to develop markets to combat rising Museum overhead. One cannot help wondering what Mr. du Pont's reaction would be were he to learn that the gardens were now helping, even in a small way, towards the expenses of his beloved Museum.

Marnie Laird is an avid gardener. She is vice chair of Horticulture in the Garden Club of Wilmington and has assisted with the propagating at Winterthur.



Zonal geraniums planted in 5-in. pots will be used to decorate outdoor areas and will be sold in the Plant Shop.

Please Eat the Centerpiece

One for the Guinness Book of Records

 by Ed Lindemann



photos courtesy of Longwood Gardens

The author used 200 pounds of fruits and vegetables to create four centerpieces at Longwood Gardens. Try one yourself.

Last fall I was asked to create four edible centerpieces to be staged in the conservatory at Longwood Gardens as part of their fall Chrysanthemum Festival. While I had put together arrangements for the dining table, I had never tackled anything on this scale before: arrangements 5 ft. tall, balanced on top of a pedestal. For moral, we well as muscle support, I enlisted the help of a fellow staff member, Joe Kerwin.

On the afternoon of setup, Joe and I packed the car with vegetables and headed toward Kennett Square. Along the way, we bought out the biggest pumpkins,

squashes and pineapples from more than one roadside stand. Halfway through construction, we made another "vegetable

More than one ten pound pumpkin exploded as it careened off the pedestal hitting the stone floor and sending a spray of seeds in all directions.

run." In all, we used more than 200 pounds of fruits and vegetables.

The basic mechanics of holding the

arrangements together are the same as one would use for smaller ones; the exception is contending with the extra weight. We used metal pipes in place of wooden stakes.

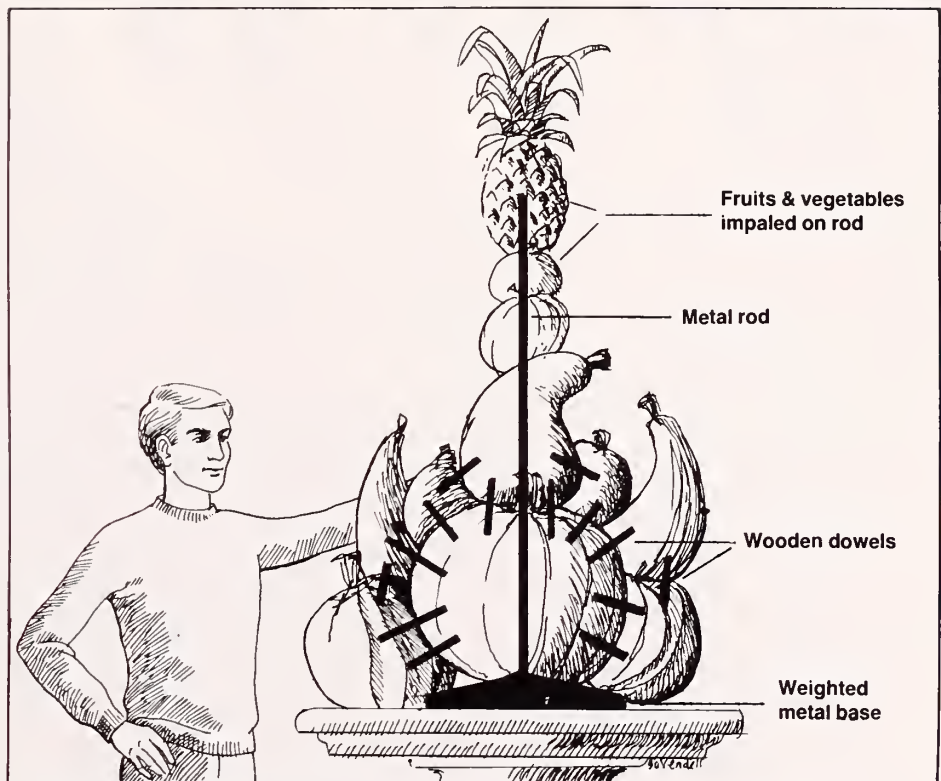
It took a while to learn the art of balancing the heavy fruits and vegetables. More than one ten pound pumpkin exploded as it careened off the pedestal hitting the stone floor and sending a spray of seeds in all directions. Finally, after a great deal of trial and error, often to the amusement or horror of the watching audience, we completed the four arrangements.



Because the exhibit was to last several weeks, produce was checked periodically and replaced, a job that required more fortitude as time went on. We found little consistency in which elements of the composition decomposed more rapidly. Sometimes it was an apple or squash, but the large pumpkins were most humbling of all — humility is removing dripping, quivering masses of pulp. Fortunately, Longwood has an elaborate compost bin disposal system, but carrying an armload of decaying produce through the elegant conservatory tends to threaten one's dignity.

It was fun to create these Gulliver-like centerpieces, and while the arrangements weren't exactly a horticultural tour de force, who knows, they may qualify for a horticultural entry.

Ed Lindemann is the creator of the dining size vegetable centerpiece that appeared on the cover of *Green Scene* (July, 1981). Lindemann is PHS horticulturist and designer of the Philadelphia Flower Show.



Mechanics of assembling a centerpiece.

GRAIN FARMING:

More Than It's Cracked Up To Be



by Marjorie Hunt

"A flail, that's what you need," said my husband, "a good old-fashioned flail." "What's that?" I replied.

He fished a piece of junk mail from the wastebasket and began to sketch on the back of an envelope.

"Bet I could make you one in half an hour," he said. "They look like this."

It looks like a riding crop, I thought, or a bacillus. Then I remembered a collection of mysterious instruments, relics of various outmoded technologies, I'd seen somewhere in New Hope. On our way to the lumberyard for a dowel, we arranged, for my benefit, an educational stopover at the New Hope shop.

One thing we vegetable gardeners generally don't have to fret over is our means of harvest and preparation. There's nothing more simple than pulling up a carrot or shelling a pea. But here I had a crop that had given me nothing but pleasure until the day it ripened — and since that time, one frustration after another.

No, that's not quite right. The decision to devote about a sixth of our vegetable plot to winter wheat was itself born of frustration. Gardening books and magazines abound with advice on how to make the most of small spaces, how to increase your yields, how to develop new beds, and so on. What no one ever tells you is how to cut back when you've overdone it. My garden measures 90 by 100 ft., and our three children, after a confusing period when we wondered if they ever would, have now left home. The family-size plot is still with us, and provides for the two of us in superabundance, not only in the growing season, but, by means of various storage methods, all winter, too. Recently, we threw out old harvests to make room for the new in the freezer.

So what to do? Let the garden go back to grass? First of all, it was to weeds, not grass, that it would be going, and secondly, grass now seemed dull to us. And someone would have to mow it.

deciding what's next

Each spring, for several years, I made inventory of our needs, as my plantings grew not only more widely spaced, but also more esoteric. Cantaloupes and watermelons worked well one season, but not the next, adzuki beans, mung beans, pea-

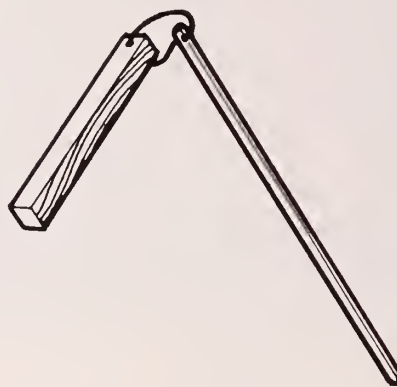
nuts, popcorn, cardoon, arugula, and artichokes either failed or produced in overabundance.

One day during my annual shelf inspection, I made a sudden discovery. What about the good old staff of life, I asked myself.

Threshing, I found, is an occupation I place on my list of preferences somewhere between washing venetian blinds and taking dead mice out of traps.

I'd been doing all my own baking since two weeks after my marriage. Over the years, I've progressed from white to whole wheat, and then from store-purchased flour to grinding what the natural food stores, for some reason, call "wheat berries." Whole wheat flour, I'd learned, if not laced with preservatives, has a short shelf life. Grinding on demand not only eliminates a last minute dash to the store, but also guarantees optimum nutrition.

I started out with a cast iron hand grinder I kept in the basement. Other people keep



exercise rooms in their basements; I kept a flour mill. Not until I realized that I had begun showing it off to casual visitors and urging them to try it out, and until my husband observed that fewer people were coming to our house, did I ask for and receive at Christmas a fine electric mill.

Old Scot that I am, I could not but remark that each time I pushed the impulse to self-provide along another notch, I saved more money. Home-baked is not only tastier, but also cheaper than any but the most air-fluffed of commercial breads; home-

ground costs much less than commercially milled flour. So why not make a total sweep of it and grow the wheat? Behold the origin of Little Minnesota — the ten-by-fifteen-foot plot of brilliant green that showed through winter snows and mellowed into rippling gold by June.

"Ripens 'round Independence Day," the man at the feed store told me. "Plant it in late September, or early October, and you'll outwit the Hessian fly. And don't forget to rotate the field next season."

Field? He must have been wondering, even as he said it. Originally, having read that a little over a quarter-pound would plant my 150 sq. ft., I asked for a half pound to be on the safe side. When I heard him say "ten cents, please," I changed to a pound. There was a lot left over after I'd sown my narrow-spaced drills and covered them three-fourths of an inch deep. A little goes a long way and over-thick sowing, which is easy to do if you use the broadcast method, will mean low yield.

The wheat of Little Minnesota was winter wheat. It was also hard red. Another winter type, soft red, is used in cake and pastry, but it is less comfortable with drought and cold, and does best in the South and the Pacific Northwest. The latter area also grows much white wheat, the most common commercial variety. And then, to confuse things, there is also durum, the stuff of delicious homemade pasta. If you plan to have a Little Minnesota of your own, I'd advise finding a farmer in your vicinity, and asking what variety of wheat he grows. That's easier than making a fool of yourself at a local feed store.

Rains came during the first year of my life as a grain farmer, but my wheat didn't fall flat on its face, or lodge,* a common problem years ago, but less of one now that wheat is bred with tougher stems. I had a little wheat rust, but it was easy to pick off and discard the blackened seed heads. The healthy ones, by that time, were a gorgeous soft yellow. Then, as I hinted earlier, the troubles began.

when to harvest

Independence Day dawned hot and humid. Now, when you tend a tiny, but con-

continued

*lodge: describes grain beaten down, never to rise again, or to ripen



spicuous, wheat field in a village full of retired farmers, one thing you'll never lack is advice about when to harvest. Too soon, and the heads will be soft and susceptible to spoilage; too late and you'll lose a lot of the grain to birds, varmints, and general wastage. We took a poll, and, sure enough, July 4th was the day.

If you've doubts about when to harvest, pull a few heads, and, with a rubbing motion, shell the grain. Grain should free itself from the husks easily. Chew the grains. They should feel hard to the bite, not milky. The husks may still have some small streaks of green on them at this point.

As my husband held the stems erect in loosely gathered bundles, I closed in on them, row by row and bunch by bunch, with a powerful weapon – a gasoline-fed, string-flinging weed eater machine that made me feel like a terrorist with a machine gun.

As for advice on how to harvest, that was less forthcoming, or, at least, less varied. "Get a combine," everybody said. A combine would have straddled my entire pancake patch! I had a brainstorm. As my husband held the stems erect in loosely gathered bundles, I closed in on them, row by row and bunch by bunch, with a powerful weapon – a gasoline-fed, string-flinging weed eater machine that made me feel like a terrorist with a machine gun. Then we took turns. The method works, I tell you, but it demands a certain trust between co-workers. Don't use it during a quarrel.

A scythe with a cradle would have done as well, and would have required less bending while we bundled the wheat into sheaves with binder twine. But then, that would have meant an earlier trip to New Hope to find one.

We brought in our sheaves with proper ceremony, and hung them to dry in the tractor shed. Had we more time when we finished the harvest, we would have stacked them ornamentally in the field. Just as well we didn't. It rained all week.

Then when the stalks and heads were brittle, and the grain fully ripe, two weeks later, our conversation about the flail took place.

In New Hope, we finally located the antique store with its assortment of grappling hooks, harness buckles, and shoemaker's lasts. No flail. The clerk, certain they had one somewhere, called the manager. My husband poked me in the ribs about the time the manager, also unsuccessful in his search, had gone to look for the owner.

"You realize, I suppose, that if they find the thing, I'm going to have to buy it," he informed me. "I don't expect it to cost much more than two years' supply of flour."

Fortunately, they never found the flail. Instead my husband made one. He drilled a hole in one end of a heavy dowel, and a second one in a 2-ft.-long, 1½ square block of hardwood. He connected the two by means of a strong cord, leaving a couple of inches worth of play between the wooden pieces.

With this new-made antique I flailed away – for eight solid hours on the hottest day of the summer. He brought me cartloads of sheaves and helped lay them out, a thin layer at a time, on a large bedspread we use for picnics. The threshing floor was the driveway.

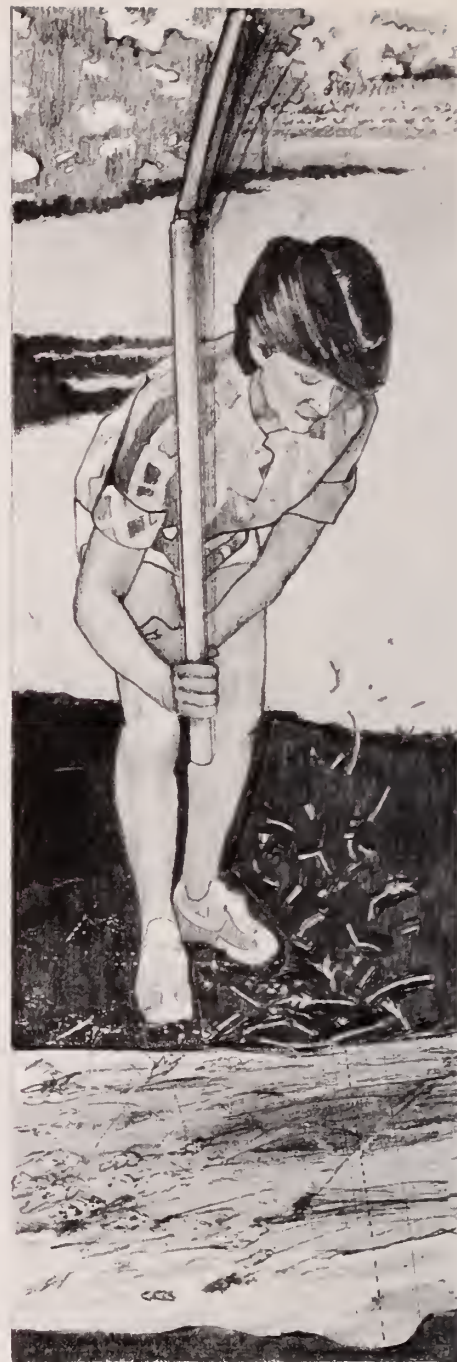
Threshing, I found, is an occupation I place on my list of preferences somewhere between washing venetian blinds and taking dead mice out of traps. Maybe I just lack aggressive impulses. Another thing about it is the tediousness. I tried making up pseudo-Indian chants to keep my rhythm up. Maybe rock music would help some people.

I also tried counting cars on the road, until one of them, a pickup, slowed down and backed. The driver, a good friend of ours, walked straight over to my husband and asked sympathetically if something was wrong with me.

There must be an easier way of removing grains from husks. I'm eager for any suggestions, any advice on what would be called appropriate technology." Maybe it's intended as a communal activity. My husband for some reason saw to it that we only had one flail, but I kept remembering a scene we'd witnessed in Greece. High on a mountain in Arcadia, some singing women were beating with long-handled instruments, a shelf of rock their threshing floor. Then they threw basketsful into the wind to winnow it.

Not that winnowing is any problem. That's the fun part. We set a large window fan on a chair with a tub placed under it. Slowly, we dropped a cascade of husk-laden grain in front of the fan – and magic! It gave that same sense of effortless achievement that making butter does, or using a potter's wheel. The effort came in cleaning up the driveway afterwards. The sound of the running grain was music, and before long the tub was full of medium brown, chaff-free pellets – a pleasure to run the hand through.

Those nutty berries have been grist for my mill, food for the larder, substance for



our table, each year. The flavor is mellow, the texture of the flour is smooth, and the cost is almost nothing.

There's more than taste, however, to recommend a miniature Minnesota for your garden. For example, there's the peace of mind that comes from self-sufficiency and safety. Toxic substances are not even minor ingredients of my daily bread. That I can say because I know for certain where my bread comes from.

Marjorie Hunt, author or co-author of four books, gardens in Upper Bucks County

A GLISTENING CARNIVOROUS JEWEL:

Drosera x Nagamoto



by Patricia A. Knauff



Flower scape of *Drosera x Nagamoto* shows 2 of 23 blooms. Flowers are 2 cm in diameter.



Drosera x Nagamoto in bloom in terrarium with living sphagnum moss and pebble layer for water reservoir.



Top view of *Drosera x Nagamoto* in 4-in. diameter terrarium. Flower scape rises from the center of the plant.

photos by Patricia A. Knauff

The genus *Drosera*, encompassing more than 100 species, is truly the jewel of the carnivorous plant world. *Drosera* comes from the Greek word, *droseros*, which means glistening in the sun.

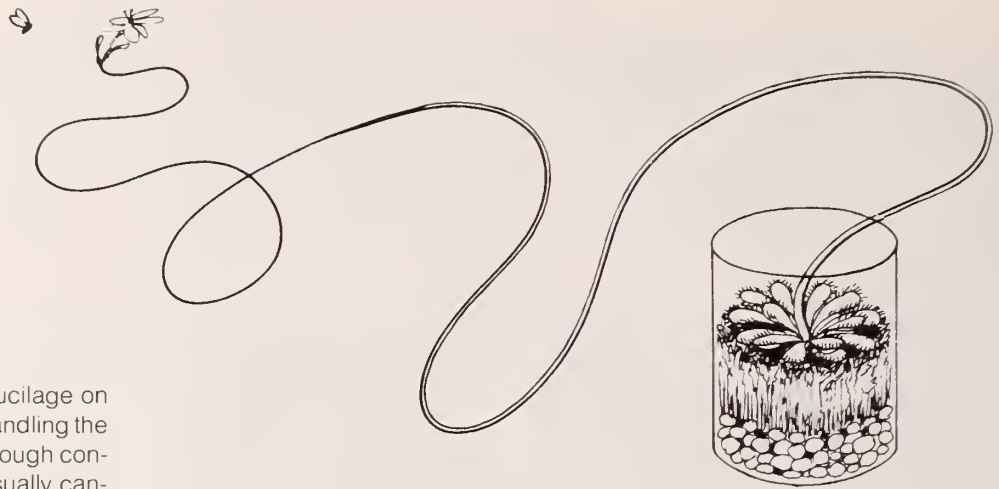
Drosera x Nagamoto, popular with carnivorous plant collectors, is considered a relatively easy sundew to grow. World Insectivorous Plants, an excellent carnivorous plant nursery, classifies their plants ranging from Class 1 (very easy culture requiring a minimum of care) to Class 5 (plants that require precisely controlled environmental conditions recommended for dedicated growers). *Drosera x Nagamoto* has a Class 2 rating compared to a Class 1 rating for *Sarracenia purpurea venosa*, southern pitcher plant. This sundew hybrid is exceptionally beautiful and vigorous with semi-upright rosettes up to 2¾ in. in diameter.

The cultural requirements for *Drosera x Nagamoto*, light, water, humidity, and potting medium, are the same as for most other carnivorous plants. Living or long fiber sphagnum moss is the ideal potting medium for the sundew because of its antifungal properties and its ability to retain water while providing good aeration for the roots. Because carnivorous plants are sensitive to the minerals in hard tap water, watering the sundew with spring water eliminates this problem. Placing *Drosera x Nagamoto* in a terrarium met the plant's high humidity conditions. Since direct sunlight can cause problems of high temperatures inside a terrarium, it is best to grow the sundew under artificial lights. The growing distance of this species to artificial lights has a very dramatic effect on the pigmentation of the plant, with a distance of 6 to 9 in. producing crimson tentacles.

When planting *Drosera x Nagamoto* in a small terrarium, first put in a 1½ in. layer of pebbles (not marble chips) to double as a water reservoir and drainage area. Then apply a 1-in. layer of long-fiber sphagnum moss or live sphagnum moss before positioning the sundew; add additional sphagnum moss around the plant.

Sundews are a bit tricky to plant and

continued



groom because of the sticky mucilage on the tentacles. Be careful when handling the plant since any mucilage lost through contact will not be replaced. This usually cannot be helped when transplanting the sundew, temporarily giving the "jewel" of the carnivorous plant world a mangy appearance until new leaves appear.

The small size of the terrarium my sundew inhabits permits only limited access to the plant, so I groom it using my college biology dissecting kit. Using a probe, I carefully part the foliage near the crown to reveal the dead leaf I wish to remove. I then use a long pointed pair of scissors to cut the leaf close to the crown and remove the leaf with long tweezers.

Because sundews are generally smaller and more delicate than pitcher plants, they are more apt to be overwhelmed by vigorously growing sphagnum moss. If the sundew looks as if it is about to be consumed by the sphagnum moss, trim it with scissors, or remove small clumps with tweezers.

I observed a relationship between the amount of water present in the water reservoir and the amount of mucilage the sundew produced. Initially I would water the sundew with spring water only when the last of the water in the reservoir was gone. Under these conditions the sundew did not seem to produce the amount of mucilage I felt it should. The plant's ability to attract fungus gnats, which were plentiful, was poor. I watered more frequently to maintain a higher level of water in the reservoir. Subsequently I noticed the amount of mucilage on the tentacles had increased, and the plant's ability to attract fungus gnats was enhanced.

I often remove the terrarium lid so the plant can lure its meals – fungus gnats. Another advantage of this practice is the captured prey won't become covered with fungus when the terrarium is closed.

If you are interested in growing a carnivorous plant, see the sources at the end of this article. The few remaining areas, where this fascinating group of plants can be found are vanishing all too quickly.

Carnivorous Plant Sources

Carolina Exotic Plants
P.O. Box 1492
Greenville, NC 27834
Also sell live sphagnum
(Catalog 75¢)
Chatham Botanical
P.O. Box 691
Carrboro, NC 27510
Plants are tissue cultured
(Catalog 50¢)
Country Hills Greenhouse
Rt. 2
Corning, OH 43730
(Catalog \$2.00, refundable with order)
Hungry Plants
Ron Gagliardo
4571 N.W. 19th Terrace, Sect. 2
Tamarac, FL 33309
Tissue cultures of most
(Catalog 50¢)
Lee's Botanical Garden

P.O. Box 7026
Ocala, FL 32672
Orgel's Orchids
Rt. 2, Box 90
Miami, FL 33187
Peter Pauls Nurseries
Canadaigua, NY 14424
Also sell live sphagnum
(Catalog 50¢)
Plant Shop's Botanical Garden
18007 Topham St.
Reseda, CA 91335
(Catalog \$1.00, refundable with order)
West Australia Carnivores
P.O. Box 62
Vinton, VA 24179
(Catalog 50¢)
World Insectivorous Plants
2130 Meadowind Ln.
Marietta, GA 30062
(Catalog 50¢)

Carnivorous Plant Books Available in the PHS Library

Carnivorous Plants, Cynthia Overbeck. Lerner Publications Co., Minneapolis, 1982 (for children)
Carnivorous Plants, Randall Schwartz. Praeger Publishers, New York, 1974
Carnivorous Plants, Adrian Slack. The MIT Press, Cambridge, 1980.
Carnivorous Plants, John F. Waters. Franklin Watts, Inc., New York, 1974 (for children)
Carnivorous Plants of the United States and Canada, Donald E. Schnell. John F. Blair, Winston-Salem, 1976.
Cultivating Carnivorous Plants, Allan A. Swenson. Doubleday & Company, Inc., Garden City, 1977
Rodale's Encyclopedia of Indoor Gardening, Anne M. Halpin, ed. Rodale Press, Emmaus, 1980
The World of Carnivorous Plants, James and Patricia Ann Pietropaolo. R. J. Stoneridge, Shortsville, 1974

Carnivorous Plant Society & Publication

Carnivorous Plant Newsletter is the official journal of the International Carnivorous Plant Society. The dues for this quarterly journal is \$10 annually. All membership correspondence should be addressed to:


Ms. Pat Hansen
c/o The Fullerton Arboretum
Dept. of Biology
California State University
Fullerton, CA 92634

Patricia Knauff graduated with an associate degree in horticulture from Temple University, Ambler Campus. She continues to enlarge her carnivorous plant collection. Currently she is constructing an indoor carnivorous plant bog.

'Baby Merion Beauty' English ivy makes an excellent evergreen groundcover. Here it hides the bottom of a deck. The reversion (a constant problem with the cultivars of English ivy) in the middle left was removed after this picture was taken.



photos by Arthur O. Tucker

 by Arthur O. Tucker

HAPPY ACCIDENTS:

Hardy Houseplants in the Garden

I seem to have run across my hardy house plants by accident. Every spring I give the house plants (and myself) a vacation by sinking the pots in the garden. Getting them out of the house reduces the maintenance in the midst of our hectic summer activities. The plants grow large by fall; actually, they grow too large, and therein lies the problem. At the end of summer, I always wonder where we are going to find room for these green monsters, and I end up taking cuttings or divisions, leaving the largest portion in the garden. By doing that I have found, usually by accident, that a number of plants normally considered to be house plants are actually hardy in my garden over the winter.

english ivy and its relatives

My first accident was a cultivar of English ivy (*Hedera helix*) in my parents' garden in Bethlehem, Pa. (Zone 6*). Now, a few cultivars (e.g., 'Baltica') of English ivy are

listed as hardy by the nursery trade to Zone 5, but the house plant books insist that the other cultivars are not hardy. Wrong! The authors have not tried these ivies outside or in the right place. English ivy is considered as marginally hardy to Zone 5 and reliably hardy to Zone 6, so some of the many cultivars should also be hardy this far north.

My favorite English ivy is 'Baby Merion Beauty,' also known as 'Duckfoot.' This dwarf ivy forms a soft, undulating ground cover. It can also be pruned and constrained, however, and I've used it as an edging this spring in a Victorian-inspired shady garden. 'Baby Merion Beauty' came through green and ready to grow after the cold blast of February 1982, when some of my more tender plants succumbed in my garden in Zone 7.

No cultivar of ivy should be planted in full sun, as the scorching winter rays are sure to create a brown mess by March. English ivy is a denizen of forests and should be given some shade and protection.

The variegated ivies, although they are

very attractive, definitely want shade. I have had success outdoors in Zone 7 with 'Anna Marie,' 'Bruder Ingobert,' 'Frosty,' 'Glacier Improved,' 'Harald,' 'Kolibri,' 'Microphylla Variegata,' 'Paper Doll,' 'Silver Emblem,' 'Silver Lace,' and 'Stardust.' Some cultivars of English ivy, especially the variegated ones, are just too tender to survive in the open garden. I tried to pamper these variegates and failed, even in summer: 'Jubilee,' 'Königer Variegata,' 'Lee Silver,' 'Little Diamond,' 'Liz II,' and 'Sagittifolia Variegata.' According to the catalogs, 'Buttercup,' 'Gold Dust,' and 'Gold Heart' should also be hardy.

Other ivies that have been successful outdoors include 'Boskoop,' 'Comglomerata,' 'Fluffy Ruffles,' 'Itsy Bitsy,' 'Manda's Crested,' 'Needlepoint,' 'Old Lace,' 'Purpurea,' and 'Sweetheart.' All of these ivies have unusual foliage and enliven the landscape with their contrast.

A hybrid of English ivy with *Fatsia japonica* is the intergeneric hybrid x *Fatshedera lizei*, the tree ivy. When we first started to

continued

*See zone map on page 22.

attend a small church on Maryland's Eastern Shore, I was curious as to where the local flower arranger had purchased her tree ivy. When I asked her how much the florist had charged her, she looked at me in disbelief and replied that she picked all that she wanted from her backyard. Since then I have tried the variegated cultivar, 'Variegata,' in a protected, shady corner next to my house in Zone 7. The tree ivy is listed as only hardy to Zone 8 by the USDA, but *Hortus Third* correctly lists it as being hardy to Zone 7.

leopard plant

Another pleasant accident was my wife's leopard plant (*Ligularia tussilaginea* 'Aureo-maculata'). Leopard plant is native to Japan and is frequently cultivated in gardens there. It does best in cool soil and is

Monkey-puzzle has a gawky but interesting shape reminding one of something from a coal-age forest, and I almost expect a six-foot dragonfly to land nearby whenever I see one.

found in its native habitat near the seashore. Leopard plant was a favorite of the cool parlors of our Victorian ancestors under the name of farfugium. Leopard plant always seemed to sulk in its pot, even when sunk in the soil outside for the summer, so I planted it directly in the cool shade of our garden underneath a camellia. Well, during the winter of 1982 the camellia died back to the ground but the leopard plant came through shining. There is only one secret to growing leopard plant: never allow it to flower. Remove the flower stalks as soon as they form in the fall; flowering and fruiting are a trigger to die, leaving only small offsets to carry on future generations. Another cultivar, 'Argentea,' has its leaves edged in silvery white and is hardy in Washington, D.C. Leopard plant is hardy to Zone 7 if protected.

piggy back plant

The piggy back plant, *Tolmiea menziesii*, is native to the northwestern U.S. and performs as a wildflower in my shaded border. The leaves should be periodically pegged down to produce rooted offsets or the parent plant will die and take its "piggybacks" along with it. Piggy back plant should be hardy to Zone 6 if protected.

strawberry begonia

Strawberry begonia, *Saxifraga stolonifera*,



'Harald' English ivy contrasts with the common English ivy against a shaded garage wall.



This monkey-puzzle tree, or Chilean pine, is growing in Jardin Botanique in Geneva, Switzerland, but this species can also be found at Rockwood Museum in Wilmington, Delaware and at the Arboretum of the Barnes Foundation in Merion, Pa.

fera, also survives well over winter in moist, shady recesses. The exposed plants usually die, but I have seen plants in the chinks of rocks and steps survive in Zone 6.

hardy begonias

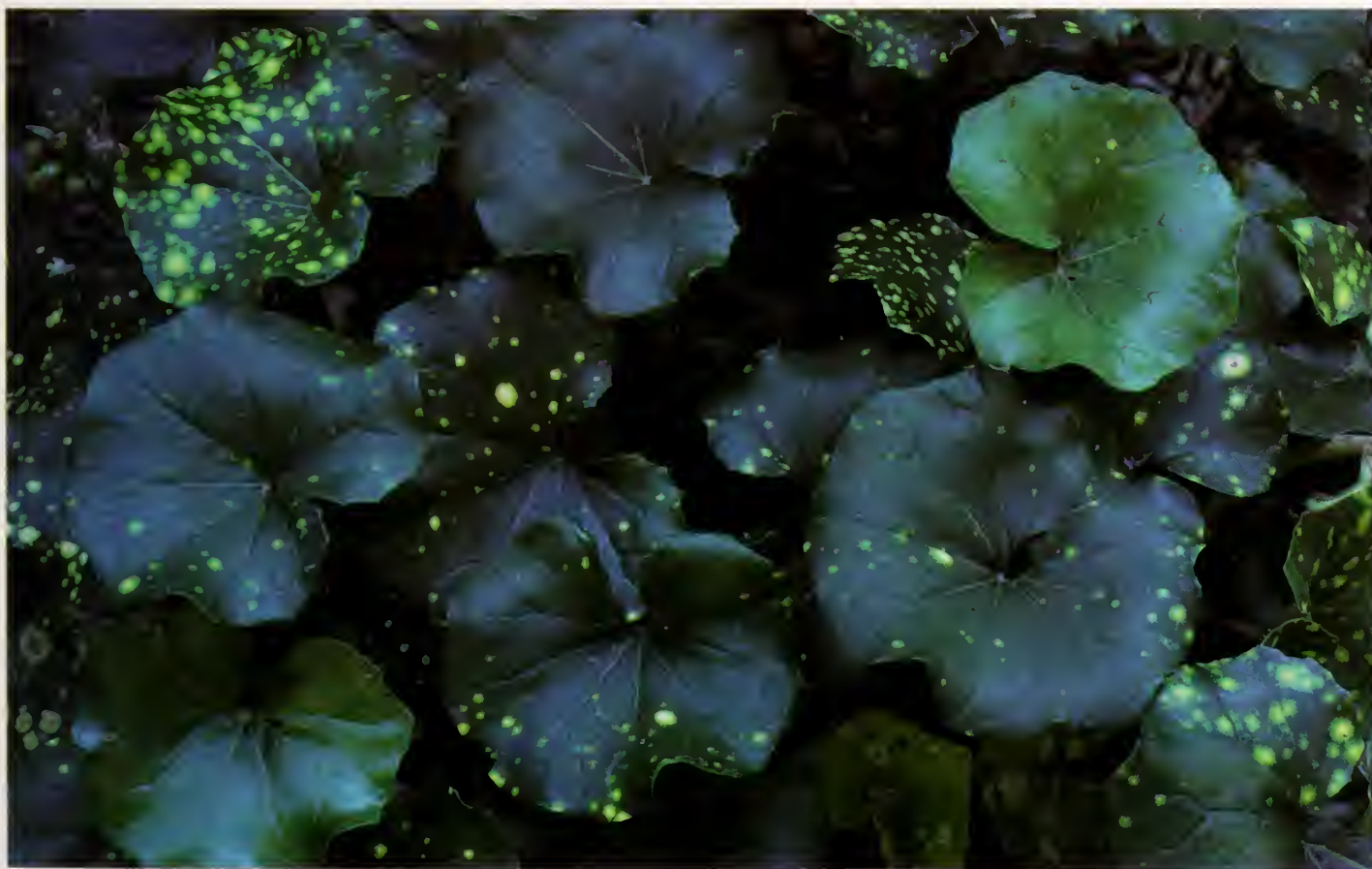
The hardy begonia, *Begonia grandis*, performs well in Zone 6 if protected over winter.* While its cultivar 'Alba' is somewhat more tender, a number of hybrids have recently appeared among begonia-lovers and should soon become more readily available.

hardy fuchsias

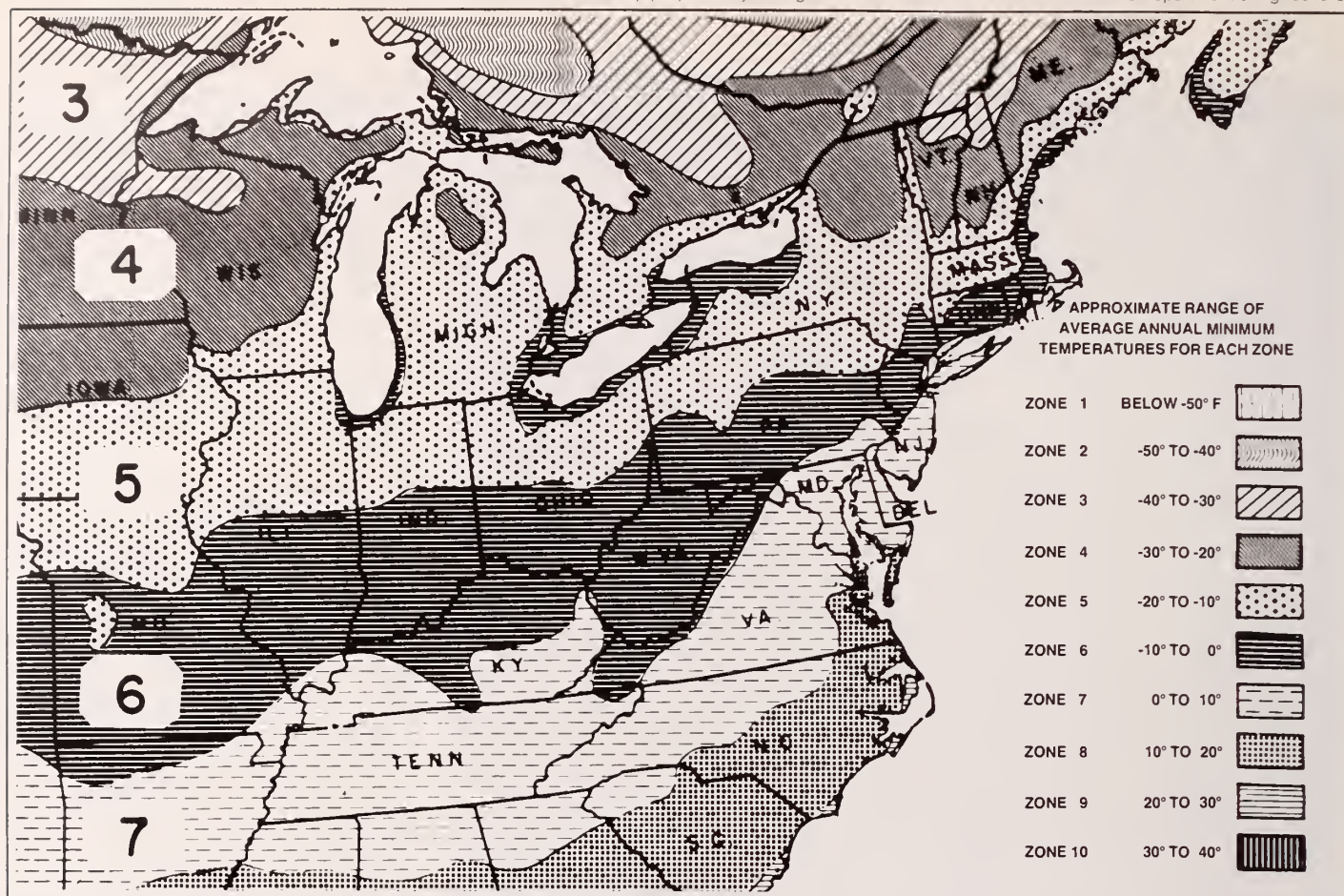
In the April 1983 issue of the *American Fuchsia Society Bulletin*, Wray Bowden recounted his efforts at growing hardy fuchsias at Simcoe, Ontario (Zone 6). Using 6-12 in. of straw mulch during the winter and planting next to the house, the following fuchsias have done well: *Fuchsia magellanica* and its selections ('Landon's Hardy

continued

*See *Begonia grandis* by George Harding, September/October 1983 *Green Scene*, pages 34-35.



Leopard plant forms yellow spots, probably due to a virus infection, in cool weather.



Clone, 'Senorita,' 'Alba,' and 'Riccartonii'), *F. lycioides*, *F. microphylla* sub-sp. *F. hemisleyana*, *F. procumbens*, *F. x corallina*, and a number of cultivars of varying parentage ('Globosa,' 'Tom Thumb,' 'Santa Claus,' 'Papoose,' and 'Scarlet Baby').

butcher's broom

Butcher's broom, *Ruscus aculeatus*, is another plant that can be used as a ground cover. Mine luxuriates in some rather dry soil underneath my azaleas. Butcher's broom is an excellent evergreen and is sometimes cut at Christmas time. It is, however, dioecious, so you must plant both male and female plants if you want the

There is only one secret to growing leopard plant: never allow it to flower. Remove the flower stalks as soon as they form in the fall; flowering and fruiting are a trigger to die, leaving only small offsets to carry on future generations.

bright orange-red fruits (my male plant grows well but is currently pining for female companionship). Butcher's broom is also interesting to have in the garden for its habit of seemingly flowering and fruiting in

the middle of its "leaves." Actually, its "leaves" are extensions of the stem called cladophylls, and the areas where the flowers appear are actually the nodes. Butcher's broom is hardy to at least Zone 7.

hardy conifers

A number of evergreens sometimes considered as house plants and as not hardy outside in Zones 6 and 7, do in fact make good shrubs and trees in protected areas, in those zones. Perhaps, the most famous, from its overuse in late nineteenth century English and northern Italian gardens, is the monkey-puzzle tree, *Araucaria araucana*. Monkey-puzzle has a gawky but interesting shape reminding one of something from a coal-age forest, and I almost expect a six-foot dragonfly to land nearby whenever I see one. Monkey-puzzle is hardy to Zone 7 and can be grown as far north as Massachusetts along the shore (remember the Captain's monkey-puzzle tree in the *Ghost and Mrs. Muir*?). The specimens of the monkey-puzzle tree have survived since the late 1800s on the grounds of Rockwood, an English country Gothic mansion, with very little extra care except for siting in a protected area.

From a greenhouse in Michigan, I ob-

tained a cutting of the new blue columnar Italian cypress, *Cupressus sempervirens* 'Glauc.' This has survived well at my front door in Zone 7.


others?

Many more plants could be selected to be hardy. The hardy orange tree, *Poncirus trifoliata*, is hardy to Zone 6, and I have been testing a number of F₁ hybrids with *Citrus*. Selection could also be done on rosemary, *Rosmarinus officinalis*, and bay laurel, *Laurus nobilis*, for clones reliably hardy in Zone 7 (mine only occasionally winter over).

Until someone really ambitious develops a Plant Hardiness Zone Map for the world, I am going to have to rely on intuition and plain trial-and-error to find more hardy house plants. Knowing the plant's geographical origin and altitude usually help to select candidates, but you only know if you try your garden and your conditions.

Arthur O. Tucker is a research associate in the Department of Agriculture and Natural Resources at Delaware State College in Dover. His personal interests include the systematics and cultivation of essential oil/herb plants and the flora of the Delmarva Peninsula.

Natural Selections: Arrangements for Public Places

 by **Lucie B. Steele**

A faded but still lurid bouquet of pink, blue, and yellow plastic tulips, daffodils, and zinnias on the reception desk of the United States Mint in Philadelphia clashed with the American flag and Mr. Reagan's portrait. I wanted to chuck the plastic arrangement into a nearby bin, but the presence of security guards ruled that out.

I was in the U.S. Mint lobby because Elizabeth Jones, the chief sculptor/engraver, wanted to replace the man-made flowers with natural ones that would contribute to the dignity of the huge hall, ones that would need no care, ones that would tolerate low light as well as the oily graphite dust that filters down from the minting machines several floors above. I suggested a large design of dried flowers.

Jones wanted to brighten the room with flower arrangements. She wanted them to last at least two years and, in light of newly imposed federal budget restraints, she did not want them to raise Treasury Department eyebrows.

Jones and I went to the third floor, one seldom seen by the public or a camera. It is here that coins are designed and manufactured. This is also the site of the Presidents' Room into which Jones ushered me. The 42 ft. x 90 ft. conference room is so named because three panelled walls hold white plaster and bronze casts of medals commemorating each of the nation's presidents. It has an undraped window wall facing Independence Mall, a bare parquet floor, several library-size teak tables, and dozens of heavy captain's chairs upholstered in black. Jones wanted to brighten the room with flower arrangements. She wanted them to last at least two years and, in light of newly imposed federal budget restraints, she did not want them to raise Treasury Department eyebrows. Identical dried designs on pedestals in front of the two 4-ft. wide window dividers I felt would fill the bill. My ideas seemed good, and she forwarded my proposal to Washington. Several months later I received a three-page legal ruling from "Treasury," which allowed me to proceed.

I began with the Presidents' Room arrangements. First I made pedestals by

closing the openings of two 40-ft. terra cotta sewer pipes with 13-in. plywood circles. Several coats of black gloss paint converted the former sludge conduits into handsome columns. Next, I unearthed the containers – old iron downspouts liberally encrusted with rust, which echoed the color of the walls and the bronze casts. A plastic sour cream carton wedged into the mouth of each spout holds a block of brown floral foam ("Sahara," the brand name, is especially created for dried arrangements). Sprigs of *Statice germanica* hide the foam. Laurel (*Kalmia latifolia*) foliage kept supple by glycerin not only

gives the arrangement depth and softness, but also repeats the shade of the chair seats, because the glycerin turns the foliage black. Teasel (*Dipsacus sylvestris*) and lily of the Nile (*Agapanthus africanus*) both painted white, bleached okra pods (*Hibiscus esculentus*), large heads of yellow yarrow (*Achillea filipendulina*), and creamy cardon puffs (*Lemaireocereus weberi*) all provide color. For the finishing touch and to add a hint of humor, I tucked in branches of honesty (*Lunaria annua*), which is also known as money plant.

The arrangement for the semi-circular grey/brown granite desk in the Mint lobby

continued



U.S. Mint President's Room arrangement (one of a pair) in author's workroom. The arrangement is 36 in. tall and 32-36 in. wide. The author used iron down spouts, cardone puff, statice, yarrow, agapanthus, laurel, teasel, lunaria and okra.



Dried arrangement on granite desk in lobby of U.S. Mint.

contains money plant too. The container there is an 18-in. black terra cotta cylinder with an arrangement of *Hydrangea paniculata*, glycerinized hosta and kalmia foliage, *Protea*, *Oldenbergia*, *Malaluca* pods, and bleached reeds twisted into curlicues.

the elevator ordeal

The hour scheduled for delivering my three arrangements coincided with the demise of the U.S. Mint's main elevator. That did not affect the lobby design; it did, however, have great impact on the two Presidents' Room arrangements. To get these 3 ft. x 3 ft. 30-pounders to the third floor, I had to locate a push cart; load pedestals, arrangements, tool kit, and cartons

In charge of adorning the 6-ft. alcoves on either side of the Palladian staircase in the Museum's West Foyer, they were tired of straggly house plants that never lived long in those areas without light and never were in proportion to the alcoves. The women yearned for huge fresh flower arrangements changed weekly similar to the Metropolitan Museum of Art.

of extra flowers onto it, unload to lug everything including the cart down two flights; reload, find the service elevator in the basement, ride four floors up and push my wares to the conference room. Somewhere during this ordeal one downspout dropped, Sahara shattered, flowers scattered. It was a nightmare. I recovered my faculties as well as the debris, installed two pedestals and one arrangement and head-

ed back to my Haverford workroom. Within a week the new arrangement was in place – this time without mishap.

While the Mint pieces were in various stages of creation, four members of the Women's Committee of the Philadelphia Museum of Art talked with me. In charge of adorning the 6-ft. wide alcoves on either side of the Palladian staircase in the Museum's West Foyer, they were tired of straggly house plants that never lived long in those areas without light and never were in proportion to the alcoves. The women yearned for huge fresh flower arrangements changed weekly similar to the Metropolitan Museum of Art. Unlike the Metropolitan, however, Philadelphia has no endowment for fresh flowers. The Committee

chose permanent designs of dried flowers and asked me to do the arrangements.

Finding the right containers for the alcoves was not easy. I located one in Narberth that had possibilities – a tapered, lattice-pattern concrete planter. Remembering the "bird in hand" adage, I bought it and let my fingers walk through the yellow pages while pursuing its twin. For days I dialed – starting with the C's ("Ceramics" and "Concrete Products"), then F ("Florists – Retail" and "Floral Suppliers"), G ("Garden Centers"), L ("Lawn Furnishings"). I stopped at N ("Nurseries – Plants, Trees, etc.") when someone in Newtown Square reported he "might have something." He did. It was an exact match!

continued



Carrying one of the museum arrangements to a van.



Dried arrangement in alcove of west foyer of Philadelphia Museum of Art

Arrangements for Public Places

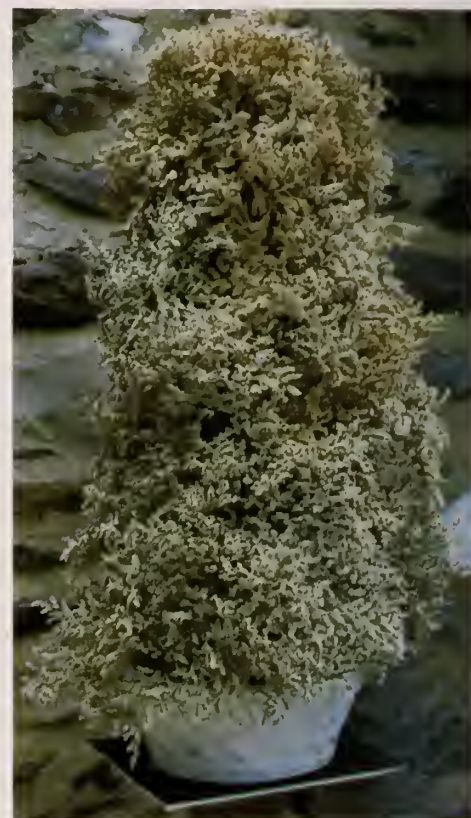
continued



Blocks of Sahara doweled with bamboo garden stakes and encased in a cone of turkey wire for museum arrangements.



Covering floral foam and turkey wire with *Statice germanica* for museum arrangement. Cone has been affixed to planter with floral clay and plaster of paris. Concrete planter was later painted chestnut.



Statice germanica hides cone of floral foam and turkey wire for museum arrangement. Concrete planter was later painted chestnut.

photos by L. Steele

the understructure

The Museum arrangements are big — 4 ft. tall excluding pedestal. To achieve height with the short-stemmed materials I would be using, I fashioned 10 blocks of Sahara into a 3-ft. high pyramid for each container. I doweled the blocks together with bamboo garden stakes and encased the cone with turkey wire. Before affixing it with floral clay to the planter, I placed stones on the floor of the vase to provide bottom weight. Then I poured plaster of Paris around the base of the cone to insure structural soundness. Weighing almost 50 pounds without flowers, it is highly unlikely it will slide off a pedestal.

The size of these two arrangements and their background limited my choice of flowers: they had to be large in scale and their colors had to blend with the Foyer's peach/pink marble walls and floor. I selected clusters of Joe Pye weed (*Eupatorium purpureum*), which keeps its mauve color if picked and dried when immature; *Hydrangea paniculata*, which my mother in Wav-

erly, Pa., watched each August day and gathered when the blooms were white and pink; large tan artichokes (*Cynara scolymus*) impaled on strong wires; smooth-surfaced cinnamon protea flowers not only to contrast with the fuzzy textured hydrangea and Joe Pye but also to match the color of the pedestals. Glycerinized laurel foliage, I decided, would give depth as it did in the U.S. Mint compositions. Glycerinized and gilded beech (*Fagus sylvatica*) would repeat the tone of the brass handrail behind the alcoves.

When it was time to arrange, I could not do so in my workroom. Its low ceiling threatened head injury while on a ladder placing flowers into the pyramid's peak, and its 28-in. door prohibited the removal of the 36-in. wide finished designs. My husband, Jim, carted the stands and planters to the garage. Here, my spatial problems were solved.

With all but the bottom portion of the arrangements completed (left bare so they could be grasped by the planter for trans-

porting to the Museum), I engaged two movers and a large van to move the results of my labor to the West Foyer.

I led the way in my sub-compact jammed with ladder, tool box, wires, pedestals, finishing flowers, touch-up paint and dustpan. In spite of expressway potholes, the arrangements arrived unscathed. The movers positioned the pedestals and placed the planters upon them. I opened my ladder, climbed into the alcoves and finished the designs by inserting the bottom flowers and foliage that cascade down the pedestal.

Selecting natural materials, drying and fashioning them into designs for Philadelphia's landmarks to visitors was an honor and thrill for me.

Lucie B. Steele is a blue ribbon winner in the artistic classes at the Philadelphia Flower Show. Her workroom, "a former glory hole," is in Haverford, Pa.



High and dense azalea hedges may provide privacy for the homeowner but they also may be a cover for intruders.

Landscaping for Security:

Burglar-Proofing Your Home with Plants



by Amalie Adler Ascher

If you consult most any landscape design textbook for help in planting your property, you'll find plans for arranging outdoor spaces as room, for separating the area the public sees from the places where the family plays and hangs its wash, and for creating special garden features to produce accent and focus. You'll learn too that to structure a design, you should begin with large trees and ground covers, fill in with smaller trees and shrubs, and lastly add annuals and perennials as the final decoration.

There's another angle, however, to landscaping about which little if anything has been written, largely because it deals with an old problem that didn't warrant much attention. Now, it has become a matter of grave concern. The rash of burglaries in recent years has brought landscape planting under scrutiny as a means of safeguarding property either as an outright deterrent, or at the very least, reducing its

attraction as a cover for crime.

Landscaping for privacy can nowadays become a double-edged sword. Tall and luxuriant shrubbery, once the hallmarks of a prestigious home, might now place it in jeopardy. And those who allow their places to become overgrown are indeed asking for trouble. With these problems facing us, maintenance to keep plants in line is no longer a matter of choice, it's a necessity.

sticking it to them

I remember our old house. Common barberry bushes dotted the front slopes, *Julianae* barberry (*Berberis julianae*) grew at one side, and a tall old-fashioned pyracantha stood by a living room window. I never cared for thorny plants and ripped them all out except for the trifoliate orange (*Poncirus trifoliata*), otherwise known as hardy orange. I saved it because at that time it was all the rage among flower arrangers, who prized it for its spiky branches that

could be pruned dramatically for modern designs. But for meanness, this shrub or small tree, has no equal. Its dense maze of dagger-like thorns are more formidable than any watchdog, since no food or drink will placate them, nor drug overcome them. The only way to best such an adversary is to cut it down, but the process is cumbersome and painful, if not downright dangerous in the event blood was left behind as a clue.

The use of barbed plants to stave off intruders is not new, says Jack Daft, director of the graduate program in landscape architecture at Morgan State University in Baltimore. Daft is also chairman of the Maryland Board of Examiners of Landscape Architects, and a fellow of the American Society of Landscape Architects. Prickly plants, he says, are commonly used along roadsides and around public housing. The hardy *Rosa rugosa*, for example, a tough, thorny shrub, is a popular highway

continued

Landscaping for Security:

continued

plant. A hedge of it bordering private property, by itself, or in conjunction with a fence, is virtually impossible to penetrate. It is also good as background planting on a large lot and is guaranteed to discourage anyone from hiding in it. But the plant has a negative aspect in that it is a rampant grower and must be kept under control.

Lately, Daft has been engaged in a landscape project that seeks to reduce vandalism and trespassing, while maintaining the quality of the property. The place, which at one time comprised the grounds of a private estate in Guilford, one of the city's most fashionable neighborhoods, is known as Sherwood Gardens. Long renown for its springtime bloom of tulips, azaleas and other flowering plants, the Baltimore landmark was acquired several years ago (exclusive of the house and a small parcel of land around it) by Stratford Green, a non-profit organization which continues to operate the gardens as a public showplace.

When the group took over the property, it had been neglected, the overgrown shrubbery providing seclusion for clandestine beer parties and other activities objectionable to the neighborhood. Daft was called in to reconstruct the landscape. The problem that confronted him was how to retain the style and character of the setting and at the same time gain visual control of the site.

His solution included pruning trees by

for the wrong purposes."

At Sherwood Gardens, he explained, evergreens pruned hard to expose a strong trunk crowned with a high top-knot, take on an Oriental character. Or, "plain, old" cedars pruned up 15 ft. lose their common identity and become works of art. The lower area need not remain totally bare. It can be under-planted with cotoneasters, spreading junipers or ground covers, none taller than 24 to 30 in. In fact, Daft says, you could carry out an entire landscape scheme with trees pruned up to form a canopy and at the same time expose the area underneath by planting in it low shrubs and ground covers that give a clear view above them. You'd gain several advantages: the varied levels create an artistic effect while the plants themselves are easier to maintain and improve security.

trade-offs

In assessing your landscape design, you may be faced with a trade-off, Daft explains. Greater security requires better visibility, which may only be attainable by sacrificing privacy. Remove large pockets of shrubbery that enclose space and turn it into "rooms." A maze of boxwood, for example, would permit an army to hide inside. You needn't, however, throw these plants away. Rearrange them by perhaps dividing them into groups, or station them in a row.

Protect basement windows with translucent covers and fasten them down. Plant around them with dwarf Chinese holly, for example. It's eye-appealing, but the spines at the tips of the glossy green foliage command respect. Low-growing, dense and evergreen, this plant takes full sun or light shade and rarely needs pruning.

Barberry (*Berberis thunbergii* or Japanese barberry), Daft says, is undeserving of scorn. It is relatively inexpensive and provides red berries and good fall color. One of the most common plants grown in the United States today, this vigorous shrub is nevertheless worth considering as a clipped or unclipped barrier hedge.

In house eels or niches where you want to prevent intruders from lurking and taking you by surprise as you return from a night out, plant the inhospitable *Aralia spinosa*, devil's walking stick. Its trunk, peppered with pins and needles, is hardly the route one would take to climb into a second-story window. (Be forewarned though, that the plant is a re-seeder and unless you weed the volunteers out, you could find yourself enveloped in a mini-forest.) To discourage

a nimble visitor from scaling a rainspout or post to gain entry to your bedroom, "mine" his "ladder" with a trifoliate orange pruned as a topiary, or espalier pyracantha in his path. Such plants, though showy, are not to be trifled with. What's more the varieties of pyracantha bred by Dr. Donald Egolf, head of Ornamental Shrub Research at the National Arboretum are true landscape gems. Mohave, Shawnee and Teton, besides producing a thick set of berries, offer resistance to fireblight and scab.

Until I began working on this article, I never realized that one of my favorite plants could also be my protector. Flowering quince (*Chaenomeles speciosa*) bears beautiful peach or white blossoms (depending on variety) that until now had blinded me to the full worth of the wicked thorns. Other plants that could perform double duty as sentry and decoration are *Elaeagnus angustifolia* (Russian olive), varieties of *Mahonia bealei* or *M. aquifolium*, this last otherwise known as Oregon grape holly, and ilex in various forms such as pernyi. For a hedge, you could try the earlier mentioned Julianae barberry or sloe or blackthorn (*Prunus spinosa*), which combines small white flowers and shiny black fruits.

But the case for thorny plants should not be closed without a warning for the measure of risk they might entail. The very function they are designed to serve could at some point backfire. The story is told of a passerby or visitor (it is not clear which), who stumbled and fell into a maze of barberry mulched with peat moss. The victim's skin was pierced and a fungus borne by the peat moss entered, poisoning his blood stream. The injured party sued and collected handsomely, and the owner of the treacherous hedge was ordered to cut it down. The moral of this tale, perhaps, could be that when mulching the ground under thorny plants, use a material other than peat moss.

Sources

Mail Order Assoc. of Nurserymen
"Gardening by Mail - Where to Buy It"
210 Cartwright Blvd
Massapequa Park, NY 11762
(Free catalog listing sources of over 400 trees, shrubs, seeds, etc.)

Pyracantha 'Teton' available at:
Wayside Gardens
185 Garden Lane
Hodges, SC 29695
804-374-3387

Amalie Adler Ascher is a frequent contributor to *Green Scene*.

For meanness, the trifoliate orange has no equal. Its dense maze of dagger-like thorns are more formidable than any watchdog, since no food or drink will placate them, nor drug overcome them.

removing lower branches to permit viewing underneath, relocating plants to open up areas so they could be seen from the street, and replacing overgrown plants with dwarf and lower-growing varieties. These same measures could be followed by the homeowner. As Daft says, in landscaping for security, practice the same principle as in landscaping generally; select plants of the right proportions.

"The irony," he says, "is that most plantings around houses are unsafe as well as unsightly. They are not in scale with the house. In addition to covering up the residence they also block out light and air. Old shrubs or trees jammed up against the house provide a means of unauthorized entry. It's the old story; the plants are cute when they're little. But the evergreens grow up to block the view and provide screening



The trees and shrubs at Sherwood Gardens have been pruned up through the trunks or stems to expose the property behind.

The thick, impenetrable *Ilex cornuta* are a barrier to the casement windows. By keeping the hedge to a height below the windows, unauthorized movement is exposed to people on the street. The mahonia at the front corner will prick the enthusiasm of any intruder intending to slip by.

The Sweet Scent of Jasmines

 by Franklin J. Niedz



Jasminum nitidum

photos by Franklin J. Niedz

About 60 plant varieties are commonly referred to as "jasmine." Although botanically they are not all jasmines, the common denominator among these plants is that they almost always have sweet scented flowers and almost always have a vining or twining growth habit. As usual among groups of plants, there are a few exceptions. The plants that comprise what's commonly called jasmine, but are not botanically, come from the genera *Cestrum*, *Gelsemium*, *Ixora*, *Mandevilla*, *Muraya*, *Pandorea*, *Solanum*, *Stephanotis*, *Tabernaemontana*, and *Trachelospermum*. Technically, one could include the cultivars of *Gardenia jasminoides* in this listing, but they are excluded as they are well enough known on their own.

Jasmines have not really received the attention they deserve. One breath of the exquisitely scented Arabian jasmine is a moment never to be forgotten. From the dwarf, *Jasminum parkeri*, a perfect mame bonsai subject, to the highly variegated foliage of the Japanese jasmine there is something to suit everyone's taste.

cestrum

Cestrum means bastard jasmine and is a Greek word for plants whose fragrance must have inspired jasmine perfume. *Cestrum*s have larger leaves than the average jasmine varieties, and the flowers have an intense fragrance. The night blooming jasmine, fragrant at night, blooms all summer and erratically at other times of the year. *Cestrum elegans* (*C. purpureum*) offers a diversion from the usual white or yellow flowers of jasmines with its everblooming waxy-red tubular flowers. It's the only jas-

mine with cherry-red flowers to my knowledge. The willow-leaved or day blooming jasmine has clusters of starry white flowers followed by black berries. *Cestrum nocturnum* x *diurnum* has dense clusters of tubular yellow flowers and also has black berries after blooming. *Cestrum* will become gangly and unsightly if not pruned. With a reasonable amount of attention to pruning they can be made bushy and attractive.

gelsemium

Gelsemium is the Italian word for jasmine and refers to Carolina or false jasmine. Like many jasmines, it is a rampant climber that requires pruning after flowering. The plant has numerous, extremely beautiful, large fragrant yellow flowers in winter and early spring. They are shaped like morning-glories and sweetly scented like tea roses. You will want to inhale again and again when in bloom their enjoyable fragrance. Carolina jasmine grows in rapid spurts. This is a jasmine that must be included in every collection because of the absolutely stunning flowers and fragrance.

ixora

Ixora are medium-size shrubs, commonly grown as a hedge in Florida. One of them, *Ixora* 'Orange King,' is commonly called West Indian jasmine. 'Orange King' is a compact plant with dark leathery leaves and produces rounded heads of showy four-petaled jasmine-like orange-scarlet flowers.

jasminum

Almost half of all jasmines are in the genus *Jasminum*, the only true jasmine listed here. The genus ranges from the dwarf jasmine with its tiny leaves 1/16 in. in diam-

eter and bright yellow flowers, to the large 1 1/2 in. ovalish leaved Arabian jasmine with its incredibly perfumed gardenia-white flowers. This traditional jasmine fragrance comes from the Arabian jasmine and the poet's jasmine. Oddities among the *Jasminum* are the primrose and king jasmines which have almost no fragrance.

The Australian jasmine has extraordinarily attractive foliage with highly variable markings of pale green and ivory yellow throughout the leaf and dark glossy green edging. The clusters of star-like, fragrant white flowers in early spring are a bonus.

Generally, *Jasminum* have either white or yellow flowers but often some pink and lavender tones are evident in the bud stages of French perfume jasmine and royal jasmine and in the aged flowers of the Arabian jasmine.

Most *Jasminum* bloom at varying times throughout the year: the primrose jasmine in the spring, the Arabian jasmine in the summer, the Italian jasmine in the fall and the pinwheel jasmine in the winter. *Jasminum odoratissimum* is everblooming and the royal jasmine blooms irregularly throughout the year.

Almost all *Jasminum* are vigorous growers; the gardenia jasmine is a notable exception, whose growth is extraordinarily slow. The royal jasmine, like the *Gelsemium*, has the interesting habit of growing in vigorous spurts. *Jasminum* all need pruning and are best grown by intertwining on a trellis.

mandevilla

Mandevilla, sometimes listed as *Dipladenia*, is a climbing plant that also has

morning glory type flowers. *Mandevilla* Hybrid 'Alice du Pont' from Longwood Gardens has racemes of rose-pink flowers that last for days and is a large-leaved variety. The Brazilian jasmine has medium-sized leaves and is everblooming with salmon-pink, yellow-throated flowers. The Chilean jasmine has racemes of large pure white delightfully fragrant funnel-shaped flowers in the summer.

murraya

Murraya is one of the exceptions to the earlier statement that most jasmines are twiners. *Murraya* are evergreen shrubs with dark glossy green leaves. The orange jasmine, so named because of its strong orange blossom fragrance has clusters of bell-shaped white flowers and blooms several times a year. Bright red berries follow the blooms. Because all *Murraya* set fertile seed, they can be propagated by seed.

pandorea

Pandorea are ornamental twiners. The bower plant has pinkish-white flowers streaked red inside the throat with jasmine-like foliage. The wonga wonga vine has rose-trumpet shaped flowers. Pruning means no flowers in the case of the wonga wonga vine and so it will have to be left on its



Jasminum sambac 'Grand Duke of Tuscany'

own and will climb all over the greenhouse.

solanum

Of the many kinds of *Solanum*, which includes the potato and jerusalem cherry, nightshade jasmine or potato vine is quite



Trachelospermum mandianum

Sources

Anything Grows Greenhouse
1609 McKean Road, Box 47
Spring House, PA 19477
Catalog listing \$1.00
Glasshouse Works
10 Church Street
Stewart, OH 45778
Catalog \$1.50
Kartuz Greenhouses
1408 Sunset Drive
Vista, CA 92083
Catalog \$1.00
Logee's Greenhouses
55 North Street
Danielson, CT 06239
Catalog \$2.50

jasmine-like in both its vining characteristics, leaf type and flower. It has white, star-shaped flowers in the summer.

stephanotis

Madagascar jasmine is known more than most jasmines as it is commonly used in bridal bouquets. The Greek word *stephanos*, a crown, and *otos*, an ear, which refers to the auricles in the staminal crown on this evergreen twining shrub, accounts for its name. It differs somewhat from other jasmines as its dark green leaves are quite leathery, almost like miniature rubber plant leaves. The waxy ivory flowers are sweet scented resembling the perfume of the easter lily. It is slower growing than most jasmines.

tabernaemontana

Tabernaemontana are sometimes listed as *Ervatamia* and are large shiny-leaved evergreen flowering shrubs, similar to the *Cestrum*. They bear gardenia-like white flowers. Of particular interest is the crepe jasmine with its nightly fragrant semi-double flowers. *Tabernaemontana divari-*

continued

PLANTS CALLED JASMINE

BOTANICAL NAME	COLOR	BLOOM SEASON	COMMON NAME	COMMENTS
<i>Cestrum aurantiacum</i>	orange/yellow	summer	Orange Cestrum	White berries, large oval leaves
<i>Cestrum diurnum</i>	white	summer	Day Blooming Jasmine	Black berries
<i>Cestrum elegans</i> (C. <i>purpureum</i>)	red	everblooming	Red Cestrum	Red berries
<i>Cestrum elegans</i> 'Smithii'	pink	summer	Pink Cestrum	
<i>Cestrum nocturnum</i>	white	summer	Night Blooming Jasmine	White berries
<i>Cestrum nocturnum</i> x <i>diurnum</i>	yellow	summer	none	Black berries
<i>Cestrum Parqui</i>	white	summer	Willow-leaved Jasmine	Violet-brown berries; intense fragrance
<i>Gelsemium sempervirens</i>	yellow	winter/spring	Carolina or False Jasmine	Large one-inch flowers
<i>Ixora</i> 'Orange King'	orange	summer	West Indian Jasmine	Needs warm winter
<i>Jasminum angulare</i>	white	intermittent	East London Jasmine	
<i>Jasminum azoricum</i>	white	summer/fall/winter	Azores Jasmine	
<i>Jasminum floridum</i>	yellow	summer	Florida Jasmine	
<i>Jasminum gracillimum</i>	white	winter	Pinwheel Jasmine	
<i>Jasminum humile</i> 'Revolutum'	yellow	summer/fall	Italian Jasmine	Likes night temp of 40-45°F
<i>Jasminum Mesnyi</i>	yellow	spring	Primrose Jasmine	Double flowers
<i>Jasminum multiflorum</i>	white	everblooming	Angel Hair Jasmine	Very popular in Orient
<i>Jasminum nitidum</i> , <i>J. magnificum</i>	white	winter and intermittent	Angel Wing (<i>J. nitidum</i>) or Royal Jasmine	Purple buds. Strong gardenia fragrance
<i>Jasminum nudiflorum</i>	yellow	winter/spring	Winter Jasmine	Hardy in Philadelphia area
<i>Jasminum odoratissimum</i>	yellow	everblooming	none	
<i>Jasminum officinale</i>	white	summer/fall	Poet's Jasmine	The classic jasmine fragrance
<i>Jasminum humile</i> , <i>J. grandiflorum</i>	white	fall/winter	Spanish Jasmine, Royal Jasmine	Flower of the perfumers
<i>Jasminum Parkeri</i>	yellow	summer	Dwarf Jasmine	Tiniest of all
<i>Jasminum polyanthum</i>	white	winter/spring/summer	Pink or French Perfume Jasmine	Pink buds. Intensely fragrant.
<i>Jasminum rex</i>	white	winter	King Jasmine	
<i>Jasminum Sambac</i>	white	spring/fall/summer	Arabian Jasmine	Classic jasmine fragrance
<i>Jasminum Sambac</i> 'Grand Duke of Tuscany'	white	summer/fall	Gardenia Jasmine	Slowest grower of all
<i>Jasminum Sambac</i> 'Maid of Orleans'	white	summer	Arabian Jasmine	Classic jasmine fragrance
<i>Jasminum simplicifolium</i>	white	winter	Little Star Jasmine	
<i>Jasminum volubile maculata</i>	white	spring	Australian or Wax Jasmine	
<i>Jasminum volubile medio picta</i>	white	spring	Variegated Australian Jasmine	Outstanding variegated foliage
<i>Mandevilla Sanderi</i>	salmon pink	everblooming	Brazilian Jasmine	Flowers are yellow-throated
<i>Mandevilla Hybrid</i> 'Alice du Pont'	rose/pink	summer	Mexican Love Vine	Flowers are white on outside
<i>Mandevilla suaveolens</i>	white	summer	Chilean Jasmine	Bean-like seed pods; gardenia fragrance
<i>Murraya exotica</i>	white	intermittent	Orange Jasmine	Red berries after blooms
<i>Pandorea jasminoides</i> 'Alba'	white	fall	White Bower Vine	Flowers have pink throat
<i>Pandorea jasminoides</i> 'Rosea Superba'			Pink Bower Vine	Flowers have deep rose throat
<i>Pandorea pandorana</i>	red	fall	Wonga Wonga Vine	
<i>Solanum jasminoides</i>	white	summer	Nightshade Jasmine or Potato Vine	
<i>Stephanotis floribunda</i>	white	spring/summer	Madagascar Jasmine	Sweet fragrance
<i>Tabernaemontana coronaria</i>	white	summer and intermittent	Crepe Jasmine	
<i>Tabernaemontana divaricata</i>	white	summer and intermittent	Paper Gardenia	
<i>Trachelospermum asiaticum</i>	white	summer	Japanese or Korean Jasmine	Slow growing
<i>Trachelospermum asiaticum variegata</i>	white	spring	Variegated Japanese Jasmine	Beautiful variegated foliage
<i>Trachelospermum jasminoides</i>	white	spring	Confederate or Star Jasmine	
<i>Trachelospermum jasminoides variegata</i>	white	spring	Variegated Confederate Jasmine, Variegated Star Jasmine	Outstanding variegated foliage
<i>Trachelospermum jasminoides minima</i>	white	spring	Miniature Japanese Jasmine	One of the most captivating of all
<i>Trachelospermum mandianum</i>	light yellow/ gold center	everblooming	none	Unique 5 square-edged petals, delightfully fragrant

32

cata is faintly scented and has single white flowers. The *Tabernaemontana* are unique among jasmines in that they are shrubby and need no pinching.

trachelospermum

Trachelospermum, sometimes identified as *Rhynchospermum*, comprise the second largest group of jasmines. This group is characterized by extraordinarily exotic foliage. The Japanese or Korean jasmine with its multi-colored irregularly marked leaves of slate gray, yellow and green has yellowish-white starry flowers in the spring.

The miniature form, *Tabernaemontana jasminoides minima*, is choice with tiny 3/4-in. long leaves only 1/8 in. wide, and resembles an ivy in its habit. *Tabernaemontana asiaticum* 'Hosoba-goshiki' has long, waxed, solid purple leaves with bright pink veins. *Tabernaemontana asiaticum* 'Nagaba' has large creamy gray leaves veined ash pink. There are other named Japanese cultivars, which are quite rare. The orange centered yellow flowers of *Tabernaemontana mandianum* must be considered among the most beautiful of all jasmines. The flowers

are like square-edged pinwheels and are sweetly fragrant. An absolute in any jasmine collection.

propagation

The Carolina, Madagascar, and orange jasmine are the easiest to propagate since they can be grown from seed or cuttings. The *Cestrum* and *Stephanotis* are easy to propagate because cuttings will root any time of the year. All of the others, except the *Trachelospermum*, are propagated by softwood cuttings, which are taken in June or July. For softwood cuttings, cut the stem

into 4-in. lengths and insert in peat moss, sand, vermiculite or perlite. Use of a hormone rooting powder is optional. To maintain a high humidity, insert the entire pot in a plastic bag and tie at the top. Keep the rooting medium moist but not soggy. It's also a good idea to open the plastic bag every three or four days to discourage mold or fungus, which sometimes appears. The same procedure is followed for the *Trachelospermum* except the cuttings are taken in the fall or winter. Fall cuttings are called semi-hardwood cuttings and take about a month to root.

culture

Generally, jasmines will do well with four

hours of sunlight a day; with a night temperature of 55-60° and a day temperature of 70°. The notable exception is Italian jasmine, which prefers a night temperature of 40-45°. *Gelsemium*, *Mandevilla*, *Murraya*, *Stephanotis*, and the *Trachelospermum* do equally well in bright filtered light. The *Mandevilla*, *Pandorea*, *Solanum*, and *Trachelospermum* should be allowed to dry out between waterings, but not bone dry; the others can be grown in a continuously moistened condition. The Arabian jasmines are the more difficult to grow and tend to have some yellowing foliage in winter. I have had very good success using a standard house plant fertilizer (at one-

quarter strength) on a continuous feeding schedule throughout the year; some people withhold fertilizer completely in the winter months.

availability

Building a jasmine collection can take a long time as no one source seems to have more than a half dozen species or cultivars due to the limited demand. Approximately one-third of the jasmines listed in the accompanying table are available from the sources shown below; start collecting the rest from fellow jasmine fanciers.

Frank Niedz is a rare plant collector, who has grown most of the plants listed in this article.



dracaena fragrans 'massangeana'

One July evening when I returned home to a closed house, I noticed a strong sweet scent. I attributed it to some gifts of soaps and potpourri that I had purchased recently. The next morning the aroma seemed to have dissipated, but it was there again in the evening. This time, however, it was quite heavy, and as the evening progressed, it permeated the entire house. I decided that it couldn't possibly be just the soaps, so I started to check my house plants.

I happened to glance toward my 9-ft. corn tree. There, projecting from the top

was an 18-in. shoot covered with pompom-like clusters of exquisite tiny white flowers. Also, at this time of blooming, which lasted about six days, the bottom leaves on the plant seemed listless and drooping. Once the blooming was over, however, all the leaves became erect and shiny again.

When purchased from a florist shop about 20 years ago as a Mother's Day gift to me, this particular *Dracaena fragrans* 'Massangeana' was about 4 ft. high in a 9-in. pot. After five years, I transferred it to a 12-in. clay container with ordinary potting soil, and so it has remained almost thriving on neglect for the last 15 years. It has been watered every seven to ten days, and fertilized once a month for three months out of the year (February, March and April) — using whatever organic fertilizer was available at the time. It has usually been kept in a filtered sunlit window; room temperature ranging from 60° in winter* to 80°F in summer. It has never been propagated because we enjoyed it as a tree with its wrist-thick brown trunk.

While discussing the flowering with a friend at work, we decided to do some research. We soon learned that such flowering and the number of blossoms was a very unusual occurrence, but we could not find any information on how often, if ever, to expect flowering again. We also discover-

ed only one person who could furnish any information as to the propagation of the plant. That was to simply cut it off at the top, dip the end of the cutting(s) in rooting powder, and carefully set in a pot of well-aerated soil. The other alternative is to simply bend the top — which in our opinion would make the plant less attractive.

While I have taken no steps to propagate the plant, it has reached a height where cutting it back is a necessity. I only hope that my good fortune with the "parent plant" will continue; time will be the judge.

Harriet Mammarelli

*Editor's note: *Exotica Plant Manual* (Alfred Byrd Graf, Roehrs Co., E. Rutherford, NJ 1970) notes that the dracena, being a tropical plant requires "warmth and plentiful moisture with good drainage; a sudden drop in temperature may precipitate flowering, which will cause the growing top of the tree-like species to split and branch." Harriet Mammarelli said during a telephone conversation that the winter preceding the flowering was the first time the temperature in the house was set at 60° (normally it's 70°). PHS horticulturist Ed Lindemann says it's possible that the cooler winter temperature induced the formation of the flower buds.

Harriet Mammarelli is the staff nurse at the Blood Donor Center at Thomas Jefferson University Hospital. She is a plant and flower enthusiast.

planting bulbs quickly around trees

During the last week of October I decided to scatter several hundred daffodil bulbs at the edge of a grove of trees.

My problem: my planting time was severely limited, and our hand- and foot-powered bulb diggers, our hand trowels, our spade and our mattock were inadequate to a fast dig around the roots of the trees. A rototiller was ruled out lest tree roots be damaged.

continued



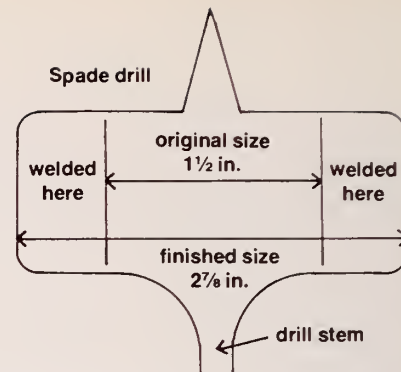
photo by Nicholas Schlier

I solved the problem by buying a 1½ in. wood spadebit, commonly used in wood work, to drill 1½ in. holes. (Available in any hardware store for under \$3.00.) I had a local welder weld a ¾-in. mild steel extension on each side. (See drawing.) By using my ¼-in. electric drill (carefully grounded), we were able to punch holes into the ground to a depth of six inches at a goodly clip without wrecking the tree roots. The soil was medium hard, dry and rooty.

The plants were in bloom by May 8 of this year. Here they are; that's my daughter seated midst 'Yellow Cheerfulness' and 'Gigantic Star' (see page 33).

Nicholas Schlufer

Nicholas Schlufer has planted several thousand daffodils on his five acres in Gladwyne. He tends vinca along the stream bank, ivy on the slopes and tries generally to keep the weeds from enveloping the property, which is wooded and cultivated in a natural manner.



Letters to the Editor

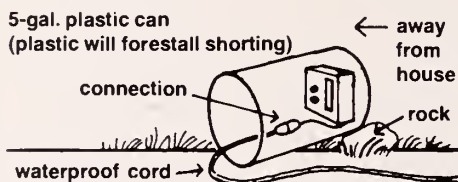
tuning out the deer

Re: Mrs. Barker's Problems with Deer in Roxborough*

Dear Editor:

Deer can drive a gardener crazy. I have tried all of the repellents, and I refuse to build 10-foot high fences. They do the most damage in my garden from approximately Valentine's Day to April Fool's Day.

In desperation I have done the following: I place an old clock radio in a five gallon plastic can (steel may cause problems if there's a short). I use waterproof electric cord, and from dusk to dawn I play WMMR (93.3 FM), the rock station in Philadelphia. The five gallon can, pointed away from the



house, acts as a sounding board, scares the deer off and leaves my garden undamaged. Our windows are closed so we hear very little if any of the music, and I have no neighbors around to disturb.

Lee Morris Raden
Charlestown, PA

*"54 Years on a Roxborough Hillside" by Mary Lou Wolfe, *Green Scene*, May '84, pages 4-7.

more about basil madness

Dear Editor:

I'm responding to Libby Goldstein's article "Basil Madness," which appeared in the May/June issue of *Green Scene*, pp. 12-14.

I want to recommend our variation on her basil jelly, as well as an excellent use for it. Some 20 years ago I complained to my wife, Mary, that the traditional mint jelly or sauce made it impossible to serve a good wine with lamb without destroying the enjoyment of the wine. Mint is simply too over-

powering a flavor to permit the nuances of a good white wine to be apprehended much less enjoyed. She thought for a while and asked if basil would be a more acceptable accompaniment, and I said I thought it might be. Mary then proceeded to make an apple jelly base spiked heavily with basil in both green and purple varieties. They taste the same; it is just a matter of preference. Since these were both growing in our vege-



table garden this was no problem. The first time we served this supplement with a leg of lamb it was a huge success as far as we were concerned and our guests seemed to concur heartily.

Also, as to Libby's pesto sauce. We had our first encounter with the green sauce on linguine pasta around 1964 when we were in the town of Alberga on the Ligurian Coast of Italy. We were enthralled with the flavor and Mary very astutely figured out the ingredients except for the kind of nuts and the use of a small amount of brandy. Nor did we figure out the exact proportions. In the following three weeks of an automobile tour of Italy we were unable to obtain pesto again. Most places didn't even know what it was and the few that did explained that it was a specialty of Liguria and that it was rarely found anywhere else.

The "Idiosyncratic Pesto" seems a more anemic product than the real "McCoy." This is not to denigrate Libby's preference,

but I would recommend that anyone wishing to try pesto, first try Samuel Chamberlain's recipe in *Italian Bouquet* (published by Gourmet Distr. Corp., NY 1958).* The parsley may not be quite so much a prize ingredient, but it is a robust sauce with real character and the Romano type cheese is an all important element. Add some brandy, too!

L. Wilbur Zimmerman
Villanova, PA

*Samuel Chamberlain recommends blending 3 cloves of garlic, 3 tablespoons of minced sweet basil leaves, 3 tablespoons of grated Italian cheese, one tablespoon of chopped pine nuts or walnut meats and ¼ tsp. of salt. This can be done either with a mortar and pestle or a blender or food processor. Add 4 to 6 tablespoons of olive oil. For color, Chamberlain suggests adding one tablespoon of fresh chopped parsley. Add to the hot pasta with a lump of butter and serve with grated cheese.

kudos

Dear Editor:

Thank you so much for putting my query about *Helichrysum petiolatum* in the *Green Scene*. I have had seven or eight answers and now have the plants cascading out of two planters. They're lovely.

Patricia Tyson
Wayne, PA

Dear Editor:

Just a note to say how much I enjoyed the July/August issue of *Green Scene*. Congratulations to all the contributors.

... I have been a member of PHS for some 38 years and I feel the Society keeps getting better and better all the time... particularly as an aesthetic and educational influence in an art that has to struggle with the American climate!

With applause and appreciation.

Edna L. Cowan
Perkasie, PA

classified ads

ARBORICULTURE SERVICES

Custom Pruning and Complete Care of Trees and Shrubs to Promote Healthy Attractive Plants

McFARLAND LANDSCAPE SERVICES

Phila. - 438-3970
East Mont. Co. - 646-7222
Main Line - 688-6644

DIFFERENT. EXCITING. GREAT FUN TO READ – for the gardener who wants to get more out of gardening! Subscribe to *The Avant Gardener*, the most useful, most quoted of all gardening publications. Every month this unique news service brings you the newest and most practical ongoing information – new plants, products, techniques, with sources, plus feature articles, special issues. 16th year. Awarded Garden Club of America and Massachusetts Horticultural Society Medals for outstanding contributions to horticulture. Curious? Sample copy \$1. Serious? \$10 full year (reg. \$15). **THE AVANT GARDENER**, Box 489H, New York, NY 10028.

ROSE VALLEY NURSERIES

Recipient of the 1983 Philadelphia Flower Show, Inc., Silver Trophy. Visit our garden center and landscape design office for seeds, plants, and plans. Staffed by professional horticulturists. 684 S. New Middletown Rd., Media, PA 19063. (215) 872-7206.

Lily Bulbs Grown in Holland

A wide selection of Asiatic, trumpet & Oriental hybrids.

**Highest Quality
Lowest Prices**
None over \$2.50

BLUEBELL LILIES, INC.

1432 Manor Lane, Blue Bell, PA 19422

For catalog, send \$1.00 and include name, address, and zip.

GREENHOUSE REPAIRS AND MAINTENANCE

Sales and Construction

GEORGE C. MATT, INC.

212 St. Georges Road, Ardmore, PA 19003
215-649-2745

LEAKY PIPE – The efficient underground watering system – makes sprinkling obsolete. LEAKY PIPE is flexible, porous pipe that "sweats" beads of moisture under very low pressure. Placed a few inches below ground, it provides water directly to the root system. No waste of water.

SAVE UP TO 60% ON WATER COST – No evaporation, runoff, erosion. Waters roots directly – not the leaves.

50-ft. roll for Gardens & Shrubs – \$24.95 pp.

LEAKY PIPE fits any application – Lawns and Gardens, residential, commercial. Agricultural – for Crops and Orchards. Commercial Greenhouses and Nurseries. Athletic Fields and Playgrounds.

Dealerships Available

Call for Free Estimate and Demonstration.

LEAKY PIPE of Pa. & N.J.

P.O. Box 2118
Warminster, PA 18974
(215) 364-2093

DWARF & UNUSUAL CONIFERS, JAPANESE MAPLES. Visitors welcome. Educational dwarf conifer display. Send 80¢ in stamps for informative booklet. Phone 609-585-5387. **Dilatash Nursery**, 780 Rte. 130, Robbinsville, NJ 08691

Books on tree culture and hardy bulbs are available at the **Tyler Arboretum Bookstore**, 515 Painter Road, Lima, PA 19037. Telephone (215) 566-9133.

Bulbs! Bulbs! Bulbs!

Ready for planting – hundreds of spring flower surprises enclosed in dormant Holland grown bulbs! A wide and complete selection of rare and unusual bulbs, including the "Pride of the Brandywine," a bright red Darwin Hybrid tulip, an exclusive of **J. Frankin Styer Nurseries**, 914 Baltimore Pike (U.S. Route 1), Concordville, PA. Telephone: 459-2400.

PRIZE WINNER!

Audrey Eiber grew four prize winning plants in the New York Horticultural Society's Spring Flower Show under the WONDERLITE!

Find out how she did it!

Write or call for free information: Public Service Lamp Corp., 410 West 16th Street, New York, NY 10010; 212-989-1600 or 800-221-4392.

WOODLANDERS

RARELY OFFERED DIXIE NATIVES AND INTRODUCTIONS, woody, herbaceous, all nursery-grown. Many hardy northward. Send S.A.S.E. (long) for mail-order list. **WOODLANDERS GS**, 1128 Colleton Ave., Aiken, SC 29801.

Complete Lawn and Gardening Maintenance
(Grass Cutting)
Shrubs Fed and Trimmed

John J. Galante

104 Atwood Road
Erdenheim, PA 19118

836-5622 836-5739

GARDENS DESIGNED. PhD leaps from I.T. to G.E. English, wildflower, meadow, herb, foundation, water, etc. SASE for pre-test. #135, Pt. 401, 19355.

HORTICULTURAL HIDEAWAY

6+ acres; pond, stream, boulders, nursery, etc. Mini arboretum with landscaped perennial beds, woodland trails, unusual collection of native shrubs, ferns & wildflowers.

Fieldstone & clapboard house with open beam ceilings, fireplace, modern plumbing; 3-car garage; income producing cottage apt. (rented); stable; and studio.

Loc. N.W. Montg. Co., PA, 40 mins. to Chestnut Hill. Interested? Write R. C. Derbyshire, Box 538, Green Lane, PA 18054.

HOLLAND GROWN BULBS

Fresh dug for fall planting. Good selection. Top quality at special prices for our local customers. Call for free color brochure.

GARY'S PERENNIALS

326 Valley Brook Road
Ambler, PA 19002
215-628-4070

Member, American Nurserymen's Association

AQUATIC GARDENS HIGHWAY 537, JOBSTOWN, NJ 609-723-4220

Lotus tubers \$19.95

Lotus tubers potted \$24.95

While they last!

White water lily – unnamed \$4.95

Parrott feather \$1.99

Water iris \$1.99

Pond Fish:

2-in. to 3-in. fantails \$4.95 doz.

10-in. to 12-in. koi \$24.99

10-in. to 12-in. comets \$9.99

4-in. to 6-in. shumbunkins \$7.95

Shumbunkin breeders \$14.95

2-in. to 4-in. arondas \$5.95

Carried in stock full line of pumps-pond liners. Fiberglass and plastic ponds in garden statuary. Large concrete bird bath \$24.95. **MONTHLY SPECIAL.**

IT ISN'T EASY BEING GREEN unless you have a QED residential Lord and Burnham greenhouse added to your digs. We design, erect, and equip to satisfy your rules of green thumb. Grow anything green year-round (except perhaps frogs). **QED, INC.**—offering expected amenities to the Philadelphia Main Line and Chestnut Hill. 688-1514. P.O. Box 161, Villanova, PA 19085.

BRITISH TEAKWOOD GARDEN SEATS – priced from \$260.00. Many styles including Chippendale and Warwick – the National Herb Garden's choice. 16-page catalog \$1.00. Country Casual, Suite 205, 17317 Germantown Rd., Germantown, MD 20874. (301) 540-0040.

LAUREL HILL GARDENS 8125 GERMANTOWN AVE. CHESTNUT HILL, PA 247-9490

- Over 250 varieties of select herbaceous perennials, wildflowers, and ferns.
- Flowering, unusual, and rare trees as well as tried and true varieties
- A large selection of arranging & Bonsai supplies
- Fancy and standard clay pots
- Landscape design and installation services
- Stop in and discuss your needs with one of our staff horticulturists

LAUREL HILL GARDENS

PLANTED ANIMAL SCULPTURES. Many different designs, call or write for list, complete gifts, shipped anywhere. Credit cards accepted. 215-925-4125. Exotic Blossoms of Philadelphia, 510 South 5th Street, Philadelphia, PA 19147.

Specializing in the Unusual ... Dwarf rhododendrons, deciduous and evergreen azaleas, dwarf evergreens, companion plants. Catalog \$1.00, refundable. The **Cummins Garden**, 22 Robertsville Road, Marlboro, NJ 07746. Phone: 201-536-2591

OUTDOOR FURNITURE


To replace or relace

Hill Co.

8615 Germantown Ave.
247-7600



A solar greenhouse is used to raise fish as well as plants. Shown here are blue tilapia, delicious and not bony, raised by Carroll and Phoebe Wetzel. See page 4.



Storing Pumpkins and Winter
Squashes. See page 4.

THE
**green
scene**

HORTICULTURE IN THE DELAWARE VALLEY
NOVEMBER • DECEMBER • 1984 \$1.50



7



11



14



30



3. Goodbye to a Prince Among Printers

Jean Byrne

4. Storing Pumpkins and Winter Squashes

Walter Chandoha

7. Decorative Yams as Houseplants

George Elbert

11. Plant Shadow Pictures

Barbara Bruno

14. PHS Christmas Exhibits

Dried Herb and Flower Wreath, Ruth Flounders; Teasel, Rosemarie P. Vassalluzzo; A Wintry Look at Seeds of the Season, Helene K. diSciullo; A Year-Round Wreath, Ginny Simonin; Tree Decorations, Rose Kosta; Everlasting Wreath, Georgie Comly; Santa's Snack, Gretchen Lea; Christmas Mantle, Jane Ward; Pennsylvania Horticultural Society 1984 Annual Holiday Show

23. Confessions of a Latin Lover

Jody Petersen

26. Letters to the Editor

28. Nature's Wonderful Mysteries: the Disparities Between Science and My Uncle Tom's Explanations

Marvin Berg

30. Metasequoia: Re-established in North America After a 13 Million Year Absence

DeWitt Hamilton

35. Classified Advertising

35. The Plant Finder

Front cover: Pumpkins and winter squashes. See page 4. photo by Walter Chandoha

Back cover: Gretchen Lea's "Santa's Christmas Snack" entry in the 1983 Pennsylvania Horticultural Society Holiday Show. See page 14.

photo by John Gouker

Volume 13, Number 2

November/December 1984

THE PENNSYLVANIA HORTICULTURAL SOCIETY

325 Walnut Street, Philadelphia, Pa. 19106

Telephone: 215-625-8250

Horticultural Hotline: 215-922-8043

Henry H. Reichner, Jr. / *President*

Jane G. Pepper / *Executive Director*

Jean Byrne / *Editor*

PUBLICATIONS COMMITTEE:

Adele G. Greenfield / *Chair*

Kathryn S. Andersen

Judy Foley

Lynn Kippax

Darrel Apps

Charles W. Heuser

James J. McKeen

L. Wilbur Zimmerman

Designer: Julie Baxendell, Baxendell / Lambeck Associates

Separations: Lincoln Graphics

Printer: Judson Printing

THE GREEN SCENE, (USPS 955580) Volume 13, No. 2, published bimonthly, January, March, May, July, September, November, by the Pennsylvania Horticultural Society, a non-profit membership organization at 325 Walnut Street, Philadelphia, PA 19106. Subscription: \$8.50 - Single Copy: \$1.50. Second class postage paid at Philadelphia, PA 19106. • **POSTMASTER:** Send address change to THE GREEN SCENE, 325 Walnut Street, Philadelphia, PA 19106.

© Pennsylvania Horticultural Society, 1984

Green Scene subscriptions are part of the membership benefits for:

Pennsylvania Horticultural Society

Maryland Horticultural Society

Frelinghuysen Arboretum

Skylands Arboretum

Blithewold Gardens and Arboretum



GOODBYE TO A PRINCE AMONG PRINTERS

This is the last issue of *Green Scene* that Judson Printing will print.* They are closing down in the spring of 1985. The January issue will be printed by Havertown Printing.

We are sorry to end our long and happy relationship with these excellent printers. The nuts and bolts of putting together a magazine is a process that depends on many people. As readers you have a sense of who the authors are from their stories and their biographies. But in publications work there are many persons who do not share the kudos and limelight for their achievements, yet they move us toward the ideal kind of publications we are seeking. People like our photographer Bud Gilchrist who might spend four hours in the bird house at the Zoo photographing a hummingbird hovering over a plant; people like designers Julie Baxendell and Marie Lambeck who work diligently to find exactly the right design concept and flow of print, illustration and white space, or who might go to the printer at 11 p.m. to do a color check; or Pat Harsch our wonderful typesetter whose intelligence finds its way around manuscripts that are more convoluted with marks and scribbles than the Parisian sewer system. Even further removed are the people at Lincoln Graphics who sweat over the color photographs, working to render them as true to reality as possible. And finally the printers.

We've admired the people at Judson Printing for their integrity, standards, ability to meet deadlines and their general striving for excellence. We will miss them.

We will miss Stan Wilmanski, the sales manager, who rushed to us in Philadelphia from King of Prussia with the first 100 copies of each issue of *Green Scene* as soon as it was bound. And we will miss all of the people in the plant who performed miracles in this technological age, producing beautiful four colors on a two-color press. We wish them all the best.

We welcome Havertown Printers; we look forward to an equally long and happy history with them.

Jean Byrne, *Editor*

*Judson Printing has printed every issue since the first in September 1972.

STORING PUMPKINS AND WINTER SQUASHES

 *by Walter Chandoha*



To keep pumpkins and squashes fresh and firm all winter hot cure them. It's not time consuming nor complex; hot curing means drying the rinds for two to three weeks at temperatures between 80° and 85°F. Curing dries, tightens and seals the rinds of winter cucurbits making them armor tough and almost impervious to rot and decay—if they are harvested with care.

how to harvest

Uncured pumpkins and winter squashes appear to be hard and tough but they're really not. They need hot curing to harden the rinds. Both have the same storage requirements and can be used in recipes interchangeably, so let's call them all squashes.

One of the best for "pumpkin" pie is Tahitian or melon squash.

First of all, don't rip them off their trailing vines. Before the frost, cut them off with pruning scissors leaving at least two inches of stem. And as convenient as it may be, don't use the stems for carrying handles; they occasionally snap off leaving the stemless squashes vulnerable to rot.

Next, handle the harvested squashes as though they were eggs. Those that are bruised quickly rot. Don't throw them in baskets and wheelbarrows, don't scratch them and don't pile them. After they're cured, however, acorn and butternut squashes can be stored in baskets or stacked in an out of the way corner. Their small size and tough rinds make them less vulnerable to bruising.

where to cure

The easiest and most logical place for curing — though not the best — is out in the garden where the squashes grew. On sunny fall days, temperatures easily reach the eighties at ground level — good for hot curing. At night, however, temperatures drop to the forties and fifties and the air is heavy with moisture — not so good. And there are creepy, crawly critters that bore into the squashes where they rest on the soil — also not good. The best technique for garden curing: place all the harvested squashes on a sheet of plywood where there's sun all day, at sunset cover them with a large sheet of plastic — old shower curtains are perfect. Curing out in the garden is better than no curing but there are better choices.

Most garages and attics are hot and dry,

both ideal for curing. They get very hot during the day when the sun is shining and they retain much of this trapped heat on into the night. Unlike the great outdoors they stay dry both night and day. If basements are warm and dry they're good for hot curing too, especially near furnaces. Outside the house, sheds, barns, greenhouses, covered porches, breezeways and patios are also good.

winter storage

After squashes are cured for two to three weeks move them to an area where it's cool and dry. The U.S. Department of Agriculture Bulletin #119 (\$1.00), *Storing Fruits and Vegetables*, recommends winter storage temperatures between 50° and 60°F. If you have a vegetable garden this booklet ought to be in your library; it has lots of good home storage advice. It's available at your county extension office or by mail from the U.S.D.A., Washington, DC 20250.

Some attics and garages cool off when outside temperatures drop with the approach of winter. If your hot curing area goes from hot to cool, you're in luck — store the squashes where they were cured. Some other possibilities: unheated halls and spare rooms, enclosed porches and breezeways. Don't be too concerned about the ideal 50°-60°F temperature range suggested by the U.S.D.A. Squashes can be successfully stored at temperatures slightly warmer and much cooler. I've stored squashes in a cold, unheated guest room with winter temperatures between 40° and 50°F. A dry atmosphere is more important than the temperature range. Obviously, temperatures in the storage areas shouldn't go below freezing nor should they be up in the 70's or 80's. If you can find a dry area with a temperature range between 45° and 65°F your squashes will be o.k.

using squashes

Even if stored under ideal conditions, squashes sometimes rot; check them every few weeks. Feel them for softness, especially the larger varieties. And look for wet spots on the floor where the squashes are resting. If a squash is leaking, it's rotting. Fortunately, a squash won't rot completely overnight. The rotting starts small and slowly spreads. If you find a squash with a small soft spot, the entire squash need not be discarded; simply cut away the bad part and use the remainder. If the flesh is firm and sweet smelling it's o.k. to use.

continued



'Kikusa' squash originated in South China.

Pumpkin pies can be made from pumpkins or any of the many winter squashes. One of the best for "pumpkin" pie is Tahitian or melon squash. Eaten raw it almost has a melon sweetness. This same sweetness is very apparent when it's used for pies.

Here on our farm, one of the ways we use squashes is in a concoction we call our End-of-the-Summer-Juice / Soup / Sauce / Stew. Just before the frost when we harvest much of our burgeoning garden, my wife cooks together just about every compatible vegetable and herb: tomatoes, peppers, celery, leafy greens, onions, garlic, herbs, both summer and winter squashes,

eggplants. They're simmered until tender, pureed in a blender, then put up in containers and frozen. Later it's used chilled as a breakfast juice – the original V-6, V-8, or V-10 – depending on the number of vegetables blended together. Heated and topped with a dollop of sour cream and a sprinkling of chopped herbs, it's a great soup. Mixed with meat stock it becomes a point of departure for thicker soups. By adding more onions, garlic and herbs sautéed in olive oil, and maybe some sausage and meatballs, it becomes a flavorful pasta sauce. A cupful or two added to stews enhances their flavor.

For either a vegetable side dish or a des-

sert we bake halves of acorn or butternut squash liberally drenched with honey and butter. It takes about an hour of simmering in a sauce pan of water for the flesh to get spoon tender. Larger pumpkins and squashes cut into chunks steamed then mashed and seasoned with cinnamon and nutmeg and butter are a good substitute for mashed potatoes. And we never throw away the seeds. Raw or roasted they're a nutritious snack food.

These tasty treats – and more – won't be yours to eat if you let your pumpkins and winter squashes rot out in the garden. Look at it this way, it takes a long time to grow pumpkins and squashes to their ripe maturity, maybe three to four months. Take another hour to harvest them carefully and after curing, to store them properly. When the winter snows come it's nice to be eating home grown squashes as firm and as fresh as the day they were picked.

GARDENER'S CALENDAR

THE GARDENER'S CALENDAR for 1985 contains 14 superb Chandoha garden photographs – mostly vegetables plus some flowers and herbs, together with growing suggestions. Our *Green Scene* cover this month is from the calendar (November).

Chandoha's introduction to the calendar explains why he gardens. He says, "Quality, exercise, economics are all reasons why I garden. But mostly, I guess, I do it because I like to see things grow. Even after 30 years, the miracle of seeing a tiny seed grow into something edible or decorative still fascinates me." This brief philosophical preface is accompanied by a misty photograph of Chandoha's garden of marigolds mixed with collards and cabbage, mums alongside leek. Raised beds of Egyptian onions, lettuce and other greens are neatly spaced in front of a split rail fence supporting dahlias.

Chandoha's **GARDENER'S CALENDAR** for 1985 is \$8.95 and is available at many book stores or by mail from the publisher: **Golden Turtle Press**, 1619 Shattuck Ave., Berkeley, CA 94709

A free-lance writer/photographer for over 30 years, Walter Chandoha's illustrated gardening stories have appeared in the *New York Times*, *Family Circle*, *Organic Gardening*, *Ladies Home Journal*, *Woman's Day*, *Horticulture*, *House & Garden*, *Family Food Garden*, *Flower & Garden*. In 1982 he won one of two of the National Garden Bureau Awards. Some readers may know Chandoha for his animal photographs, especially his cat and dog photographs that have been used to illustrate pet food packages and advertising, books and magazines, and over 200 magazine covers.



(Left to right) Tobago spp., *Dioscorea bulbifera*, *D. zanzibarensis*

DECORATIVE YAMS

as house plants

 by George Elbert

The constant flow of new tropicals for greenhouse and indoor gardening is bringing to light some amazing decorative plants that have been blushing unseen in remote parts of the world. Not the least of these are the yam vines, belonging to the family *Dioscoreaceae*, which supply an important edible starch for a large part of the world's tropical populations. They should not be confused with the sweet potato, often called a yam in the South, which belongs to the morning glory family.

They are native to Africa, India, Southeast Asia, the East Indies and South Ameri-

ca and are relatives of the plants that supply big, edible, underground tubers with white or yellow flesh, that are now becoming familiar to us in vegetable stores that carry Caribbean produce.

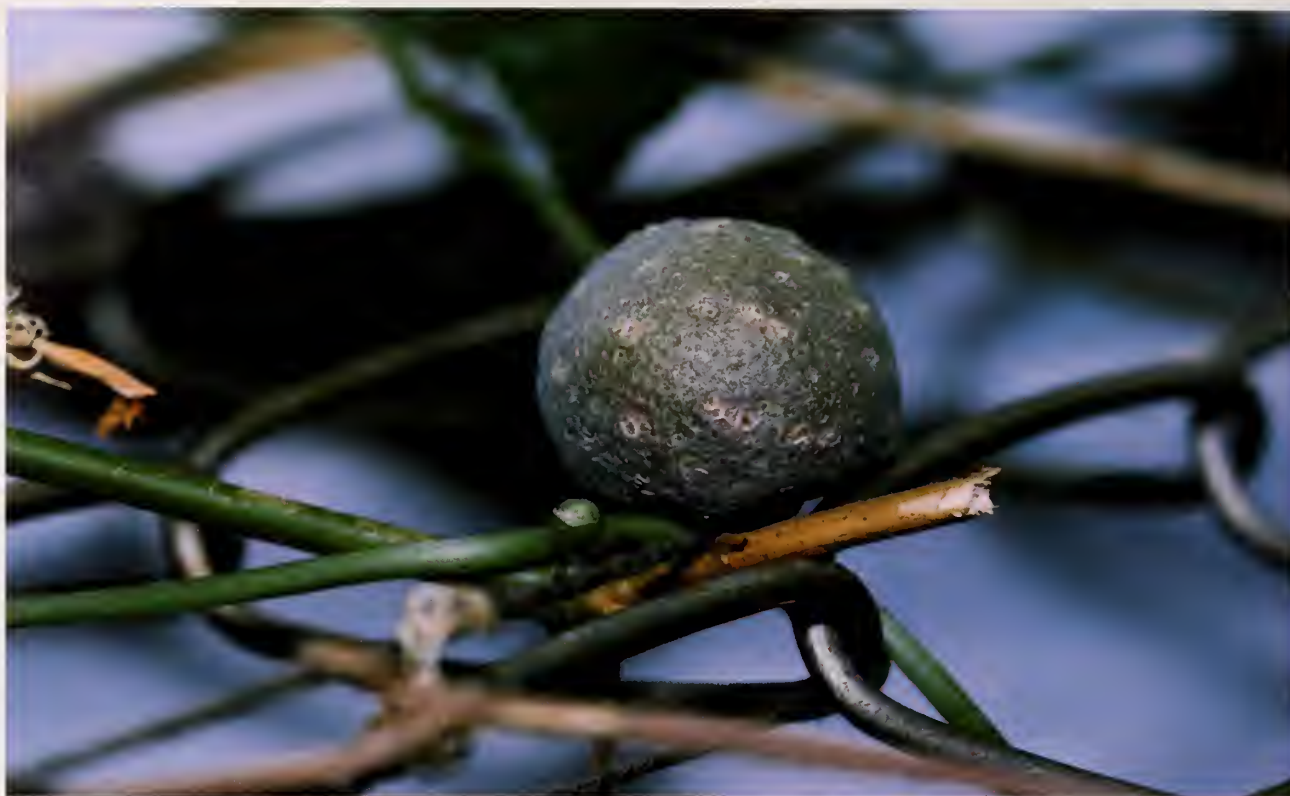
The decorative yams include some that are edible but not major crops. As there are numerous species, whether particular plants produce mild tasting tubers when cooked has to be tested in each case. Their attraction resides, depending on the species, in their small, richly patterned or large bat/butterfly-shaped leaves and above ground woody tubers (caudices)

that vary from simple cones, like those of many succulents, to monumental natural sculptures. Most of them also produce tubers on the stems; one is even called the air potato.

They are easy to cultivate. During their growing period — all year except about three months in winter — they need only garden soil, partial sun or fluorescent light, regular watering, occasional indeterminate fertilizing and, of course, a small or large trellis.

Two of these plants are familiar to any succulent enthusiast, and for good reason.

continued



Air potato (*Dioscorea bulbifera*)



Dioscorea macrostachys

They possess the most spectacular tubers in the plant world. *Dioscorea elephantipes* from South Africa and *D. macrostachys* from western Mexico are almost identical, which in itself is extraordinary when you consider it, as they are found nowhere in between. The tuber is irregularly circular, up to a foot high and three feet across, brown, the surface divided into more or less hexagonal, corky divisions, like the carapace of a turtle, but raised an inch or more as if chiseled by a sculptor. The one I have is 15 in. across and so handsome that, even in dormancy, it is left out for the inevitable admiration of visitors.

From near the center of the plant rises a stiff stem equipped with sturdy hooks. The vine can reach 30 ft. or more in length unless trimmed. The Mexican species has 4-in., heart-shaped leaves; those of the African species are half that size and kidney-shaped. The flowers on both are insignificant.

As the wild tubers need many years to reach 15 in. or more in diameter, they are relatively rare and expensive. But succulent nurseries supply 1- and 2-in. tubers very reasonably and, with civilization supplying much better treatment, you can

have a superb 5- to 6-incher in a matter of a few years while enjoying the fascination of watching the hexagons taking shape.

One day at the New York Botanical Garden I noticed a big vine with gorgeous bat-shaped, 8- to 12-in. leaves. Where the petioles joined the stem there were shiny brown yams about an inch across. Generously a staff member gave me a couple of these air potatoes and I planted them both. I soon found that one was quite enough.

From a 6-in. pot, where I had planted it below the surface, it shot up a vine that rapidly filled my south window with the big leaves. Soon it became obvious that the pot was too small. But, as the vine was already too big, I retarded further growth by letting it suffer through the summer and into the fall. Late in November it was still green so I decided to see what was happening in the pot. With great difficulty I removed the soil and contents to find myself in possession of a circular potato, 5-in. across and 3 in. thick, sporting a smooth, shiny white skin. There was enough for a meal but I had no impulse to emulate 20th century plant explorer David Fairchild who tried out everything that looked edible on his travels.

The plant was labeled *D. zanzibarensis* at NYBG. It is available from Glasshouse Works, which also has a similar vine called *D. trifida* that seems even more exciting. The common name is cush-cush or yam-pee and it comes from the West Indies and tropical South America. Its leaves are much the same shape but stems and petioles are winged with lavender membranes. I haven't seen it as yet, but the combination of size, shape and color must be smashing. Moreover, according to Sturtevant,* the tuber is edible.

The plant called the air potato is *Dioscorea bulbifera*. The brown, more or less globular tubers, up to an inch and a half in diameter, can be planted below the soil or only half buried where they look better. The vine is more manageable than its larger relatives and the tubers are borne liberally in the joints of the leaves, which are heart-shaped and up to 4 in. long. The air potato comes from tropical Asia where it is gathered, when still unripe, and boiled. The question is moot whether it is "good" or "bitter." It is an excellent "conversation piece" for a sunny window.

D. discolor is the most common of the more colorful leaved species. Similar to *D.*

continued



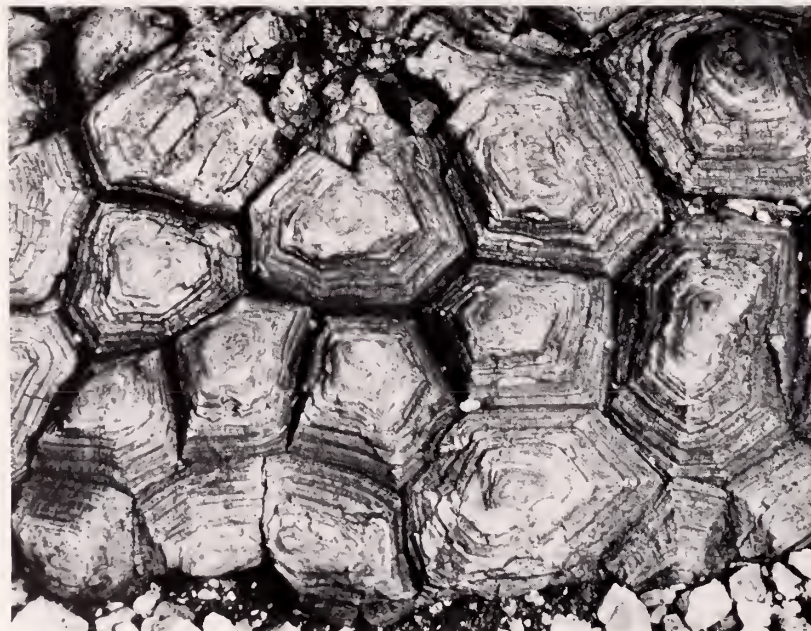
Dioscorea zanzibarensis



*Sturtevant's *Edible Plants of the World*, edited by U. P. Hedrick, Dover Publications, NY, 1972.



Dioscoreaceae macrostachys snakes its way across a support. (Below) Surface of author's *D. macrostachys* tuber, now 15 in. across.



bulbifera in habit and leaf size and shape, it is the color pattern that is striking. It has been described quite correctly in a catalog as having "leaves marbled in Nile green with silvery-gray highlights, all boldly veined in red." Other colorful leaved plants have been offered from time to time by succulent and tropical foliage nurseries as *D. amarantoides*, *dodecaneura*, and *multi-color* from South America.

These smaller, colorful vines make decorative specimens when grown on a pot trellis, the leaves overlapping, facing all one way and creating a colorful tapestry. Less vigorous than the other yams they require higher humidity and temperatures above 65°. They should be allowed to dry out a bit between waterings.

Finally, I should not overlook two little yam vines that I am still growing. *D. syl-*

vatica has only 2-in. heart-shaped leaves and develops an above-ground tuber a few inches across. The tuber of *D. hemi-crypta* is light brown, smooth and shaped like a turk's cap. The leaves are no more than an inch in diameter and the weak vine is easily grown on a pot trellis.

There are innumerable yam species and varieties from all over the world that might well be as attractive as the ones I've mentioned. One must watch the catalogs and inquire at nurseries. Mail order nurseries that usually have one or another *Dioscorea* species in stock are listed in a box accompanying this article.

Sources for Yam Plants

The Abbey Garden
4620 Carpinteria Avenue
Carpinteria, CA 93013
(\$2.00 - 1984)

Country Hills Greenhouses*
Route 2
Corning, OH 43730
Has available or can get virtually any of the decorative *Dioscoreas*.

Cycadia*
17337 Chase Street
Northridge, CA 91325

Grigsby Cactus Gardens
2354 Bella Vista Drive
Vista, CA 92083
Excellent source.
(\$2.00 - 1984)

Linda Goodman's Sun Plants*
P.O. Box 20014
Riverside, CA 92516

Singer's Growing Things*
17806 Plummer Street
Northridge, CA 91325

*Inquire about up-to-date cost of catalogs.

George Elbert has written many articles and books about houseplants. A revised edition of *The Miracle Houseplants* was issued in February '84 by Crown Publishers.



PLANT SHADOW PICTURES

by Barbara Bruno

The wealth of Victorian handicrafts to be seen in antique shops or proudly displayed in homes and museums attests to our ancestors' skill and inventiveness. Some of these creations started with collecting and drying flowers and leaves, a favorite pastime in the last century. Specimens were gathered at any time of year on Sunday afternoon "botanizing" walks, as well as from along the gravelled paths inside garden gates. Once the trophies had been preserved by careful drying in homemade leaf presses or between pages of the family dictionary, the question was what to do with these bits of natural beauty?

candle screen

Many hobbyists found inspiration in the "household elegancies" pictured in fine-lined engravings of the day's popular periodicals, such as *Godey's Lady's Book*. One attractive item that made use of the pressed and dried booty was a "botany silhouette" composed of airy seed heads and wispy grass stems, leaves, and fragile flowers preserved between two panes of window-glass. When edged with fancy ribbon and placed in a sunny window to cast its lacy shadow, it perfectly combined the Victorian loves of nature and of decoration. Such a natural tracery would look

just as attractive in a contemporary setting. Another Victorian craft creation, a candle screen made from six flower shadow pictures joined together around a lighted candle on a wooden base, would make as pretty and useful a gift or holiday decoration as it did a hundred years ago.

Ingredients for the shadow picture or screen may be collected at any season. While a wider variety of plants is available in summer, sufficiently varied material can still easily be gathered. Look for greenery outdoors or even in your houseplant collection. Keep in mind that leaves and flowers should be small

continued



PLANT SHADOW PICTURES



① Arrange and glue dried material.



② Glue or tape second sheet in place.



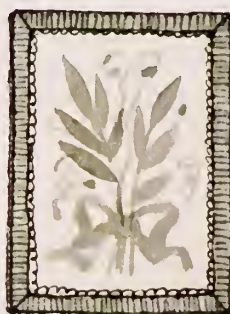
③ Glue on a lace edging, if desired.



④ Press glue coated ribbon around edge.



⑤ Notch corners of ribbon.



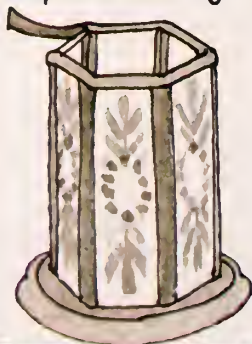
⑥ Smooth ribbon flat on front and back.



CANDLE SCREEN



① Align panels and join with strips of tape.



② Arrange on base and tape around top.



③ Invert and apply a line of glue.

in scale. Fleshy material, thick leathery leaves, and three-dimensional parts should be avoided, since they are difficult to dry by pressing flat. Choose graceful miniature-leaved ivy stems, boxwood sprigs, ferns, pieces of small needled conifers or arborvitae, heathers, herbs, like lavender or rosemary, or other similar greenery. Delicate stemmed grasses and their wispy seed heads make fine additions as do skeletonized leaves from the forest floor. Fresh material from the florist can be used after first pressing and drying.

You will also need two same-sized pieces of window-glass. It can be bought and cut to size, if necessary, at some hardware stores or a window-glass replacement shop. Picture size is up to you. When deciding on dimensions, keep in mind the scale of the material that you have collected. A 6-in. by 8-in. panel arranged with an airy selection of greenery makes a picture very much in the Victorian spirit. To join the two glass sheets you can use either one of the new transparent "miracle" glues or 1-in. wide plastic tape in your choice of color. (The tape will be seen inside the candle screen.) White glue and a length of 1-in. wide ribbon for edging will also be needed. Six 3-in. by 8-in. shadow pictures with back panes of etched glass and a round wooden base with a 7-in. diameter purchased at a craft shop will make a candle screen.

Start your plant shadow picture by arranging a selection of dried material on one piece of glass. Try different combinations until one suits you. Use small daubs of either glue to fix the dried foliage to the glass. When your arrangement is complete you might want to add a flat bow of yarn or narrow ribbon to the picture for an extra touch of Victoriana.

Glue pressed between glass panes spreads a surprising distance, so add only the thinnest film of transparent glue along side edges before positioning the second sheet on top of the composition, or neatly join the edges with strips of plastic tape. Victorian handicrafters would often add an inner edging of narrow lace before covering the tape with a length of ribbon.

Be stingy with the white glue while fixing the ribbon in place for a neat finish. Apply a thin film of glue to the inside of the ribbon. Starting at a corner, press the ribbon around the flat outer edge. Cut off any excess length. Notch the

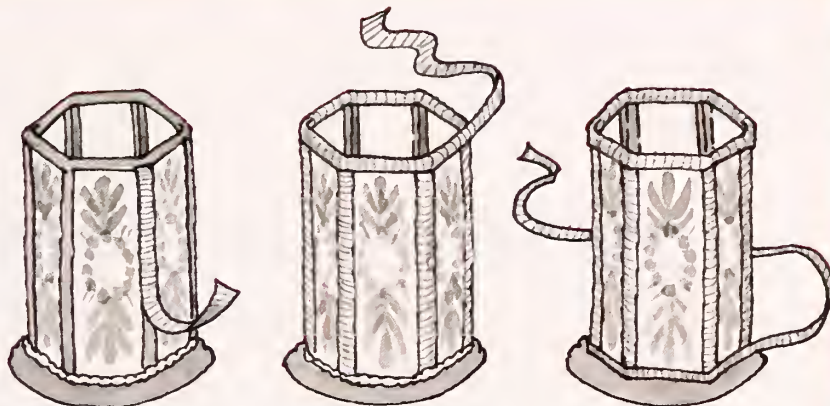
corners for a neat fit, then smooth the ribbon flat to cover the tape on the picture's front and back sides. Your plant shadow picture is now ready to sit on a sunny windowsill. If you want to hang the picture, sew on a loop of ribbon after the glue has thoroughly dried. (This will only work with small, lightweight pictures.)

Six plant shadow pictures make a candle screen. The back panes should be of etched glass to diffuse the candle's glare and allow the plant shapes to be more easily seen. This semi-transparent glass can be bought at most window-glass dealers. Make six compositions, each on a sheet of etched glass and cover with a clear pane. Secure the side edges with tape. Align the panels' bottom edges along a yardstick or some other straight edge. Arrange the panels in a line with a space of less than $\frac{1}{16}$ of an inch in between each two panels. Cover each miniscule gap with a strip of tape, joining each two adjoining panels at the same time. Arrange the strip of panels to form a six-sided screen on the wooden base. Join the first and last panel together with tape. Tape neatly around the top edge to firm up the hexagonal shape. Use short strips of tape and do not try to encompass more than one corner at a time for best control and a neater finish.

Carefully invert the hexagon and apply a generous bead of "miracle" glue along the exposed glass of the bottom edge. Replace the screen on the wooden base. When the glue has dried, cover the side seams and the top edge of the hexagon with ribbon. Cut a piece of ribbon in half, lengthwise. Glue the half-width of ribbon around the bottom of the screen. Place a candle in the center, light it, and admire your handiwork.

Barbara Bruno's book, *Victorian Christmas Crafts* (published by Van Nostrand Reinhold Co., Inc., N.Y., September 1984), is available in both hardcover (\$19.95) and paperback editions (approximately \$11.00). It contains instructions for making gifts, home and tree decorations, and seasonal food specialties. Many of the projects are suitable for family participation. Some of the crafts use natural materials from the garden

Barbara Bruno is a frequent *Green Scene* contributor



- ④ Position on base. Cover side seams with ribbon. ⑤ Cover top edge with ribbon. ⑥ Glue a half-strip of ribbon around bottom.



PHS CHRISTMAS EXHIBITS

Holidays at the Pennsylvania Horticultural Society

Each year, the Society invites members to participate in our Holiday Show. Last year's theme, "In the Spirit" inspired some of the imaginative entries pictured here. The exhibitors worked and scavenged for weeks and on shorter deadlines to gather materials, plan arrangements, wreaths, tree ornaments and other entries. The competitive judging gave the planning and final setup that extra edge of pressure, tension and achievement of the best.

This year's theme "Around the World at Holiday Time," throws open a host of imaginative possibilities. PHS members are invited to enter. The exhibitor's guidelines and schedule of classes are listed here.



photo by John Gouker

Dried Herb and Flower Wreath

by Ruth Flounders

The base is a homemade salt hay wreath. The basic technique is good for a variety of sizes and shapes.

Take two good handfuls of hay, overlap about an inch and a half and tie together with twine. Wrap firmly but allow some give, counterclockwise. Add additional bunches of hay to make a wreath about 10 in. in diameter. Tie off and wrap in the opposite direction. (You can buy a base, but add herbs with floral pins and manipulate for oval shape.)

Fill in the inner edge with bunches of fresh herbs (when available) tucking them under twine. Overlap each bunch with the preceeding one. If using dried herbs, dip in warm water 15 minutes before starting. Be generous; the finished wreath will be much thicker than the base.

Work to outer edge until back one inch of base is covered and wreath is well filled. Put aside in a dim, airy place to dry.

Secure small bunches of lavender, berries, etc., to base. Add flowers and cones with white glue letting material build on itself so the wreath gets wider and fuller.



Materials for covering the base of the wreath:

<i>Artemesia ludoviciana</i> 'Silver King'	southernwood - <i>Artemesia</i>
<i>Artemesia schmidtiana</i> 'Silver Mound'	<i>abrotanum</i>
horehound - <i>Marrubium vulgare</i>	sweet marjoram - <i>Origanum</i>
sage - <i>Salvia officinalis</i>	<i>majorana</i>
	wormwood - <i>Artemesia absinthium</i>

Materials for the top layers: everlastings, herbs and other plants

<i>Achillea</i> 'The Pearl'	Mint flowers:
<i>Ageratum</i> 'Blue Blazer'	apple - <i>Mentha suaveoleas</i>
<i>Alyssum</i> 'Carpet of Snow'	orange - <i>M. x piperata citrata</i>
<i>Ammobium alatum grandiflorum</i>	peppermint - <i>M. x piperata</i>
borage flowers - <i>Borago officinalis</i> *	pinks - <i>Dianthus</i> spp.*
chive flowers - <i>Allium schoenoprasum</i>	oregano - <i>Origanum vulgare</i>
chamomile - <i>Matricaria recutita</i>	porcelain berry - <i>Ampelopsis brevipedunculata</i>
coreopsis seed heads - <i>Coreopsis</i> 'Sunray'	<i>Salvia farinacea</i> 'Blue Bedder'
dusty miller - <i>Cineraria</i> 'Diamond'	<i>Statice sinuata</i> 'Art Shades'
garden huckleberries - <i>Solanum melanocerasum</i>	sweet marjoram - <i>Origanum majorana</i>
<i>Gomphrena</i> 'Globosa Mixed'	sweet woodruff - <i>Galium odoratum</i>
<i>Gypsophila</i> 'Covent Gardens'	tansy - <i>Tanacetum vulgare</i>
<i>Helichrysum</i> 'Bright Bikinis,' 'Roggli'	thyme:
hemlock cones - <i>Tsuga</i> spp.	caraway - <i>Thymus herba-barona</i>
<i>Hydrangea</i> spp	silver lemon - <i>T. x citriodorus</i>
lavender - <i>Lavandula angustifolia</i> , <i>L. a.</i> 'Munstead,' <i>L. pinnata</i>	'Argenteus'
	golden lemon - <i>T. x citriodorus</i>
	'Aureus'
	<i>Xeranthemum immortelle</i>

*borax dried



photo by Linda Wolfe

Editor's Note: Judges' comments, "Remarkable collection of dried plants."

Ruth Flounders serves on the Philadelphia Green Advisory Board. She is a community garden coordinator at 43rd & Sansom Street where she grows a wide variety of herbs and everlastings.

Teasel

by Rosemarie P. Vassalluzzo

At Christmas time, most people turn to their deepest imagination to create a feeling of holiday euphoria. Christmas is no time to leave the senses stranded or the imagination buried.

Nothing says Christmas more than a door piece made of natural material, a fresh kissing ball made of boxwood, or a festive stairway strung with fresh pine garlands.

The Four Lane's End Garden Club of Langhorne, Bucks County, is noted for its annual Holiday House Tour. Open to the public, this tour has been held annually for the past 25 years. Usually each house on the tour, decorated, trimmed, and adorned by the members, has a theme. Since it is a garden club, emphasis is placed on the arrangements and holiday

Teasel heads



photo by Linda Wolfe

decorations. Many times the theme and decorations incorporate the use of fresh and natural materials.

Teasel has long been a favorite for many when decorating for the Christmas season. Teasel was brought from England during the Industrial Revolution and was planted near textile mills. It was used to comb cotton and wool. The plant is a thistlelike herb with long, stemless leaves, prickly stems, and stiff bracts surrounding the flowerhead. The parts used for combing wool are the dry flower heads, whose fresh flowers are tubular, and colored pale lilac or white. The heads are cut in

continued



PHS CHRISTMAS EXHIBITS



photo by Linda Wolfe

After bleaching the teasel to a straw-like color, Rosemarie Vassalluzzo cuts the teasel heads in half.

The same teasel treatment was added to swags and garlands going up the staircase. Teasel heads were interspersed with holly, miniature red carnations and white mums for the dining room table. The living room and family room had baskets of white pine and boxwood, highlighted with stems of natural teasel.

The front door is always a primary focal point when decorating for a house tour. After much experimenting and planning it was decided that a teasel tree would be perfect. The big question – How to design and carry through this plan?

We did it; here's how you can do it.

1. Cut a 36 in. by 15 in. piece of styrofoam into the shape of a tree. You might want to lengthen the corners. Green foam is best.
2. Soak teasel heads in clorox solution. While wet, cut each teasel in half lengthwise.
3. Cover styrofoam tree with a bedding of greens; boxwood or false cypress are good choices. Use floral pins, overlapping greens.
4. Start at top of tree and adhere halved teasel heads; overlapping at the bottom of each. (See photo.)
5. Glue bark or half of a flower container to the base.
6. Using toothpicks, add cranberries at random intervals.

Rosemarie Vassalluzzo won the Philadelphia Flower Show Grand Sweepstakes in 1983 and 1984. She is the food editor for the *Advance of Bucks County*, *The Yardley News*, and the *Northeast Advisor*, as well as features writer for *Pleasure Hunt Magazine*. Vassalluzzo is a member of the Pennsylvania Horticultural Society's Public Information Committee.

FOUR LANE'S END GARDEN CLUB TOUR

Thursday, November 15, 1984 Cost \$4.00. For further information, call Eleanor Slaven 757-4381

two and attached to a cylinder that revolves against the cloth. The best heads are used for raising the nap on men's garments. The largest are used for raising the nap on blankets. Small heads are used for fine woolens and broadcloth. No mechanical device has ever been invented that can replace these heads satisfactorily.

Therefore, it is not surprising to find that when Jean Shetline of Langhorne visited her daughter in Stockton, New Jersey, she came back with bundles of teasel. Stockton was one of our country's more prominent mill towns since the start of the Industrial Revolution. The hundreds of teasel heads immediately found their way to the Holiday House Tour in Langhorne.

First the heads were cut leaving a stem for a workable clip. The teasel was then soaked in a mixture of $\frac{3}{4}$ parts clorox, $\frac{1}{4}$ part hot water, and a generous squirt of liquid dish detergent. They were soaked and bleached for about two hours. The result – wheat-colored teasel heads.

Before long we had an entire douglas fir Christmas tree covered with hundreds of teasels. Red and white ribbon were added to each teasel head along with a piece of wire for hanging. Coupled with tree lights, the tree was a magnificent display of decorating with fresh natural materials.



A Wintry Look at Seeds of the Season

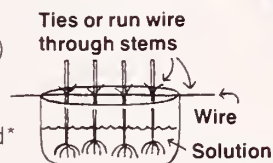
by Helene K. diSciullo

For the arrangement, Helene diSciullo used the following plant material:

Rhus typhina, drupes (staghorn sumac)
Lunaria seed pods (honesty)
Bignonia seed pods (trumpet creeper)
 Rhododendron trusses – crystal dipped*

*Crystal dipping:

Place one pound of alum (from the drugstore) into a container wide enough to accommodate plant material. Add one quart of water. Heat alum in a pan on the stove until it dissolves. Cool slightly. Wire plants sideways through stems (or tie) to support the heads beneath the solution. Suspend heads in the solution (see illustration). Watch for crystals to form, that takes 15 minutes, depending upon temperature and plant material. When crystals are the right size for the scale of the material and strength of the stem, remove. Spiked or bearded pods and heads work best since crystals do not readily cling to smooth surfaces. Keep each plant separate until dry by placing in styrofoam or can of sand. Alum mixture can be reused by heating. The alum will not damage metal containers.



Helene diSciullo is a landscape designer with a keen interest in putting the usual into a new setting and has won several awards in arrangement classes at flower shows.



A Year-Round Wreath

by Ginny Simonin

Ginny Simonin's wreath base is made from grape and honeysuckle vines. The bow is made of peeled honeysuckle, the two birds from milkweed pods. The bird's nest is made from Spanish moss; real bird's eggs are in the nest. Around the wreath are bits of moss, dried hydrangea, red rose hip berries, peels of lemon rind, purple and white Japanese beauty berry (*Callicarpa japonica*).

When the judges awarded the wreath a first, they noted: "Success due to its whimsy and delicacy; interesting use of contrasting color."

Ginny Simonin is a member of the Wissahickon Garden Club. She is a Garden Club of America judge. Simonin has frequently won blue ribbons for her arrangement entries at the Philadelphia Flower Show.

continued



PHS CHRISTMAS EXHIBITS



1



2

Tree Decorations

by Rose Kosta

"Nothing is of any value excepting that which you create for yourself, and no joy is joy save ... the joy of self-expression." These words, taken from a 1905 book catalog, guide me in my creative endeavors, the most rewarding being the tree I decorated for the 1983 PHS Holiday Show. The challenge was to design ornaments using dried materials to reflect a musical theme. My choice, "Homemade Christmas in Kentucky," inspired me to create the "country look," that is so close to my heart.

When looking for materials I went right out my own back door to a wooded area in Delaware County where I discovered grapevines that could be fashioned into tiny two inch wreaths by using the thinnest part of the vine, gathered in a circle and wrapped with another piece of vine (see photos). Grapevines are pliable and retain their shape when dry. To decorate the wreaths I first applied natural or dyed statice, purchased at a local florist in assorted colors. I then added tips of small cones, clover or starflowers (Photo 1), using a hot glue gun. On others, I attached cornhusk bows that are easy to make. When working with dried cornhusk, I soaked it thoroughly in lukewarm water, rolled it up in a terry towel to keep it moist and pliable for use between projects.

For the bows I used two or three strips, each looped once and gathered together in the center with a thin piece of husk tied in a knot. I separated the ends to give them a fuller look when dried. With the bows I used wild berries picked from a hedge bush and just the tips of wheat or tiny seed pods gathered and glued on with pine cones.

When making the cornhusk flowers (Photo 2) I varied the widths, using five loops for each, gathered to form a circle and tied. When dried I cut the ends and glued a tiny cone or clover in the center. I also used starflowers for centers. These are made by holding a small bunch together while gathering the



3

loops around them; they are then tied and the ends clipped when dry. The flowers are easily wired to the tree.

To decorate large cones, smaller flowers can be made in the same way and glued under the tips of the cone in a row of three or four. Cinnamon sticks, which release a pleasant fragrance, are tied in a bundle of five using a strip of cornhusk and decorated with tips of statice, tiny pods or starflowers.

My idea for the birds' nest came when I found a branch that had fallen from a beech tree. On it were nuts with pointed open tips reminding me of baby birds waiting to be fed. Straw from a carton of packed china was shaped into a nest with fingers and glue. I then glued in as many beechnut birds as the nest would hold.

The hearts were made by using a cardboard base with Spanish moss glued on both sides. I then added individual tips of statice to cover one side and clusters of three or four starflowers, clipped close to the bud, to go around the heart with equal spaces between them. Last but not least, the popcorn garland which no country tree would be complete without. After many years of stringing popcorn, I've found a thin needle and candlewicking thread works best. The popped kernels don't break nearly as much using a thinner needle and the thread is thin yet strong and easy to knot. Don't forget, if you're going to use popcorn as a garland make enough to loop evenly around your tree from top to bottom. If you don't spray the popcorn with shellac to save for future years, you can place it on a

photos by John Gouker

bush outside as a treat for the birds after the holidays.

I chose statice, strawflowers and starflowers, clover, wheat, tiny pods and a variety of cones on all my ornaments to give unity to the tree. Any and all kinds of dried materials, however, can be used with delightful results. Almost everything can be purchased at a craft shop or florist but there is an undeniable pleasure in walking through the woods or stopping by a country roadside to gather nature's gifts. It's pleasing to the senses, sparks the imagination and provides the joy of self-expression.

Rose Kosta won Best of Show for her tree decorations last year. She is on the 1984 Holiday Show committee. In the past, Kosta has designed and sold silk and dried flower arrangements. She grows a variety of houseplants along with herbs.

Everlasting Wreath

by Georgie Comly

My flower border was once a choice collection of carefully tended plants, many of them everlastings. Now it is a hodgepodge, a few lingering perennials and a wild assortment from field and roadside. Some have been invited, others have wandered in. These vagrants are welcome. Wild flowers have good drying potential, and they can be an arranger's secret weapon. Alone or with a few garden varieties they are superb in a long-lasting wreath.

The wreath illustrated here was begun by wrapping goldenrod (*Solidago*) to a single wire frame with corsage thread. It was dried in silica gel; then the design was developed by gluing in place unwired, previously dried flowers and foliage. These were selected for their textures and colors – the pinks, yellows, greens, misty blue and mellow white of a summer meadow.

To make this or any similar wreath, begin to pick and dry early in the season. It may take some experience to recognize the precise moment. The materials used in this wreath and the best times for collecting them are listed in the box.

To start you'll need:

- wire wreath form
- soft bell wire (single wire)*
- floral tape
- corsage thread
- silica gel
- Elmer's glue, or equivalent
- clear acrylic spray

The most satisfactory goldenrods for wreath-making are those with plumed inflorescences. Early goldenrod and late goldenrod (*Solidago gigantea*) are among the best. Examine the leaves and stems and try to pick just one variety. Select plump heads no more than two-thirds open. Strip the leaves and stand the stems in a bucket with a little water. The amount to pick will depend on the circumference of the frame: allow three heads for each inch.

The goldenrod base can be air-dried flat on a screen but dry-

*Bell wire is a plastic coated wire used for electrical equipment. It is available from hardware or electrical supply outlets.



photo by John Gouker

What and when to collect

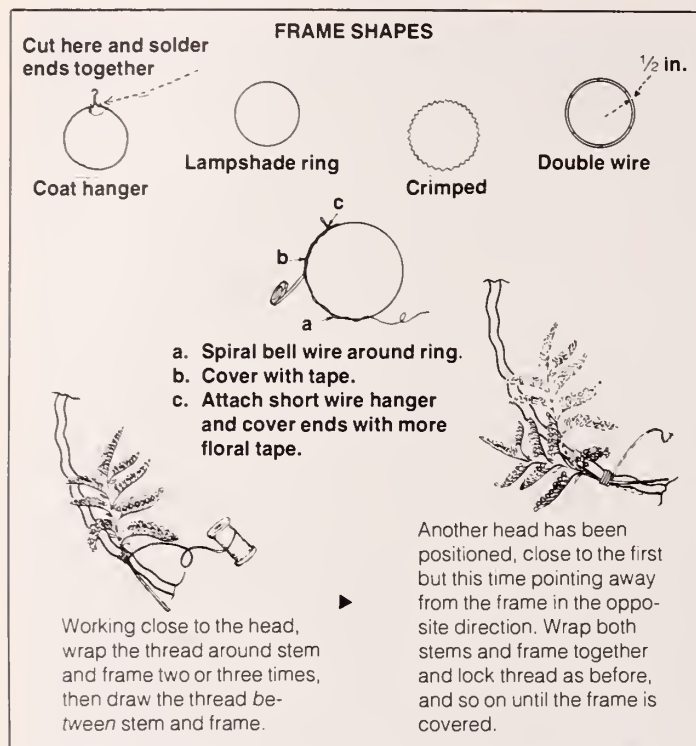
- Columbine (*Aquilegia*) seed pods; pick as petals are falling.
- Nodding thistle (*Carduus nutans*) flowers and buds showing color; late June through July. When dry, sand off spines and spray with acrylic.
- Spotted knapweed (*Centaurea maculosa*) flowers; early July till frost.
- Broad leaf statice (*Limonium latifolium*) and sea holly (*Eryngium planum*) branches; July, just as the florets are opening.
- Sweet everlasting (*Gnaphalium*) and pearly everlasting (*Anaphalis margaritacea*) before the flowers mature, usually early August.
- Early goldenrod (*Solidago juncea*) mid-July to September.
- Tansy (*Tanacetum vulgare*) heads, when all the buttons have turned yellow. Dry in silica gel.
- Upland boneset (*Eupatorium altissimum*) any time after July. Flowers will shatter; blow off "fuzz" to reveal starry calyx.
- Globe amaranth (*Gomphrena globosa*). Use the pink variety, which resembles clover.
- Bull thistle (*Cirsium vulgare*). Treat as nodding thistle.
- Hops (*Humulus lupulus*) early September. Spray heads when dry.
- Jerusalem oak (*Chenopodium botrys*). Cut branches that are stiff all the way to the tip but are still tapered. Blunt ends indicate age.
- Julian barberry (*Berberis julianae*). Glycerinize any time after the new growth has hardened.
- Self-heal (*Prunella vulgaris*). Bleach in 50% clorox solution. This is successful only if the branches have died completely while still on the plant.
- Joe-pye-weed (*Eupatorium maculatum*) tight buds; second or third week of July.

ing in silica gel produces brighter, longer-lasting color. If you use the silica gel method, first locate a large, air-tight drying container. A finished wreath will be about four inches larger in diameter than the frame it is made on and should fit comfortably into the drying box. Also have on hand a large supply of

continued



PHS CHRISTMAS EXHIBITS



silica gel. At least six pounds are needed to dry a twelve inch wreath.

Any of the frames sketched here can be used. A satisfactory ring can be made by bending a coat hanger into a circle, cutting out the hook and soldering the ends together. The wreath may slip on a single wire but this can be prevented by spiraling bell wire around the ring. Crimped and double rings will not require this step but all should be wrapped with floral tape. Attach a short wire hanger and wrap the ends of it with more tape.

Begin construction by tying the end of the corsage thread to the frame, opposite the hanger but an inch or so off center (see illustration). Snip a 2 in. stem and lay it against the knot, stem pointing toward the hanger and bud-tip pointing away from the frame. Working close to the head, wrap the thread around stem and frame two or three times, then draw the thread *between* the stem and frame. This holds the thread in place until another head has been positioned, close to the first but this time pointing away from the frame in the opposite direction. Wrap both stems and frame together and lock thread as before, and so on until the frame is covered. Joining is usually the most difficult part of wrapping a wreath. If it is skimpy or uneven in this area it can be filled in after drying.

The wreath is ready for decorating when the goldenrod is completely dry. If it has been dried in silica gel, carefully remove all lingering crystals. Spray both front and back with clear acrylic or floral spray. An easel can be improvised from a piece of composition board or cardboard large enough to extend beyond the edges of the wreath. To help keep the design symmetrical as it is being worked on, draw a vertical bisecting line on the board and center the wreath, securing it with long pins.

Before you begin gluing, lay out the basic design. Cut stems as long as needed and group the largest flowers at the desired focal points, then arrange some smaller ones around them. Beginning at the hanger, remove a flower, apply glue to the stem and/or calyx and put it back. Sometimes it's helpful to use a marker such as a red toothpick where a flower is removed. After all have been glued fill in the voids with more small flowers and foliage. Use Julian barberry leaves for emphasis or cluster them near the base in lieu of a bow. As a final, airy touch, glue on small sprays of statice.

The following books and publications will interest those who wish to know more about growing, gathering and decorating with native plants:

Pods: Wildflowers and Weeds in Their Final Beauty. Jane Embertson. Charles Scribner's Sons, NY (1979).

Botanical Wreaths. Hartley and Holliday. Flower Press Publishers, Warner, NH (1984)

Preserved Flowers, Step by Step Book of. Roberta Moffitt, P.O. Box 3597, Wilmington, DE 19807 (1973)

**Sources for Native Plants and Seeds.* Bowman's Hill Wildflower Preserve Association, Inc., Washington Crossing, PA 18977

All books except the one marked * are available from the Pennsylvania Horticultural Society Library.

Georgie Comly is a member of the Gardeners of the Crooked Billet and the Doylestown Nature Club. She has conducted workshops for both groups. She has been a volunteer at Bowman's Hill Wildflower Preserve for many years.

Santa's Snack

by Gretchen Lea

Santa's Snack. Now that was an artistic and sensual challenge. One my five-year-old twins, Jane and Sonia, would have fun helping with.

I had to think of something special to tempt Santa and to keep his health in mind.

First, a live miniature Christmas tree that would catch Santa's eye, especially a well decorated one. Something unique. Then food that would entice Santa. Will he be in the mood for hearty treats or just little sweets?

I had to have the right tree. Not one of those straggly little cedar bushes and not a four-branched blue spruce seedling, either. My first stop was my favorite local nursery, Hopewell Nursery.

At first I couldn't find what I was looking for. So I asked. I was led around to the back of the main building and much to my delight, I found a grove of about six dwarf Serbian spruce (*Picea omorika* 'Nana'). I picked one.

Back home, we searched the house and barn in all the places we keep "things we'll need someday," and came upon a cheese box. The bottom half was the perfect size for the little tree's roots.



Now to tempt Santa's appetite, to meet his energy requirements and nutritional needs and to satisfy his taste buds. Natural treats, naturally.

Sonia and Jane helped to string and eat the popcorn and peanuts, while I snipped the dried apricots with scissors into star shapes and hung them on the tree with satin ribbons. We hung dried apple rings, too. I drilled holes with an electric drill through walnuts and Brazil nuts so that wire could be slipped through to fasten the nuts to the tree. We baked gingerbread cookies in the shapes of acorns, oak leaves, and miniature men, iced details onto them with white sugar icing and put them on the tree. By inserting stick pins up through the bottom of the branches, I fastened cranberries topped with shortened birthday candles. The cranberries represented candle holders and added a touch of red to contrast with the white candles. Five red satin ribbons were tied to the tree top and woven vertically down the tree, while the strung popcorn and peanuts were draped around the tree horizontally. For a stained glass effect, I put tiny three-ringed pretzels on an aluminum foil lined cookie sheet and sprinkled various colors of crushed hard candy in the pretzel's holes. They were baked in the oven at 350°F for a few minutes, and removed as soon as the candy completely melted. I left the tray outside to cool and harden the candy. The tin foil peeled off easily. I put thin wire through a candy pane of some of the pretzel windows and hung them while Jane and Sonia managed to dispose of the rest, along with many of the other "extra" decorations.

To give the tree another natural element, I purchased tiny straw baskets and grass nests, lined them with calico and filled them with little feathered birds, raisins, and nuts. A beautifully feathered, plump blue bird, with a candle and gold ribbon

glued to the top of its head, was placed on the tree top to crown it with glory. The finishing touch was a dried apricot star dangling from its beak.

The tree looked pretty tempting, but I wanted to offer Santa more. As legend has it, Santa stays young by eating the fruit from his magical pomegranate tree. So, I produced a handsome bottle of imported German ale and labeled it pomegranate ale. To dress the bottle up a bit, I placed a gold notary public seal, embossed with my name and address imprinted, wrapped both a red and green satin ribbon around the neck and affixed them with the seal.

My "famous" peach nut bread made from this summer's peach puree, and currant raisin bread, wrapped with red gingerham and striped ribbons were offered in a beautiful duck-shaped wicker basket made in China.

Putting the exhibit together at the Society, working together with others was fun, and I lost all sense of time. When it was finished, I stepped back and thought, "If this doesn't please Santa, what will?"

Several days later we heard that Santa's Snack won a Blue Ribbon. I must admit I was proud. And so were my partners in the project.

Gretchen Lea is an interior designer who lives in Boyertown. Her love for horticulture stems from the delight she gets from working with color, shapes, and nature. She has won awards for both her floral displays and flavored vinegars at the Pennsylvania Horticultural Society Harvest Show.



Christmas Mantle

by Jane Ward

The fireplace fan used at the back of the Christmas arrangement served as a good background for the plant material. A block of oasis and a long plastic container were the mechanics needed for the narrow mantle. Breaking the line of the fan, points of deodara cedar (*Cedrus deodara*) and eucalyptus were first put into the arrangement. *Magnolia grandiflora*, variegated holly and juniper (*Juniperus sargentii*) were added to give weight to the center and length to the sides. Pinyon cones and rose hips completed the arrangement.

Jane Ward is chair of the Competitive Classes for the Philadelphia Flower Show.

continued



PHS CHRISTMAS EXHIBITS

Pennsylvania Horticultural Society: 1984 Annual Holiday Show

AROUND THE WORLD AT HOLIDAY TIME

Show dates: **Monday through Friday**
December 3 through 28, 9 am to 5 pm
Saturday and Sunday
December 15 & 16, 11 am to 4 pm

CANDLELIGHT STROLL AND PHS HOLIDAY RECEPTION:
Thursday, December 20

Maps will be available at 3 pm at PHS for the stroll through Society Hill. The PHS Holiday Reception will be from 4 to 6 pm.

The Pennsylvania Horticultural Society cordially invites you to attend and participate in the 1984 Holiday Show, "AROUND THE WORLD AT HOLIDAY TIME." Our goal is to provide each visitor with some measure of holiday inspiration, to stress horticultural information and to suggest design ideas suitable for the home. The merriment of the season is interpreted throughout the show to reflect a festive holiday celebration.

EXHIBITORS' GUIDELINES

All are invited to make entries. *Entries are to be staged Wednesday and Thursday, November 28th & 29th, from 9 am to 5 pm, unless otherwise specified.* Please note that the number of entries accepted in some classes are limited. Please call if you plan to enter and have not already registered. Phone (215) 625-8250.

PLANT MATERIAL MUST PREDOMINATE in all classes except Class #8. No artificial flowers or foliage permitted. Use of dried and treated plant material is encouraged. Fresh plant material should be replaced as needed throughout the show.

Attach name, address and phone number to all exhibits. Please remove exhibits on Wednesday, January 2.

Schedule for Exhibitors

HORTICULTURAL CLASSES

- Class #1 Container grown flowering or fruiting plant appropriate for the season to be shown from November 28 - December 7.
- Class #2 Container grown foliage plant appropriate for the season. To be shown from December 7 - December 14.
- Class #3 Forced flowering bulbs to be shown from December 17 - December 21.

ARRANGEMENT CLASSES

- Class #4 HOME FOR THE HOLIDAYS—a traditional American Mantle. Decorations for a fireplace mantle.

Candles and floor accessories permitted. Mantle provided by PHS.

4 Entries

- Class #5 THE TREES OF CHRISTMAS — Exhibitor will decorate a 6 ft. tall Christmas tree supplied by PHS. All tree decorations to be made of natural materials. Each tree to represent a different country. Countries to be chosen by exhibitor on a first come-first served basis. No electric lights permitted.

6 Entries

- Class #6 GIFT FROM A FARAWAY LAND — A holiday package not to exceed 30 in. in any direction supplied by exhibitor and decorated with natural material.

- a. Exhibitors under 16 years of age
b. Exhibitors 16 years and over

Unlimited Entries

- Class #7 NEW YEAR'S EVE AWAY FROM HOME — A table set for a New Year's Eve celebration in a foreign land. Arrangement to predominate, accessories permitted. Round 4 ft. diameter table supplied by Committee. Table must be covered.

- Class #8 PIÑATAS — Traditional Mexican Festival Decoration. Must be constructed by exhibitor. Need not be filled.

Unlimited Entries

- Class #9 IT'S A SMALL, SMALL WORLD — A Gingerbread House or Confectionary Cottage depicting a location anywhere. Some horticulture must be incorporated.

Unlimited Entries

- Class #10 GREETINGS FROM ... — A door decoration using seasonal dried and/or preserved material. Origin of Greeting to be stated.

4 Entries

- Class #11 GREETINGS FROM ... — A door decoration using seasonal fresh material. Origin of greeting to be stated.

4 Entries



photos by F. M. Mooberry

Chrysanthemum leucanthemum, golden flower, white flower.

Confessions of a Latin Lover



by Jody Petersen

There is more to the scientific names of plants than meets the ear. The dry and scholarly Greek and Latin epithets, which at first seem threatening and complicated, are actually interesting and expressive. A little probing and investigating can reveal much about a plant's color, structure, texture, origin, history or even a quirk in its nature. How much more interesting and elegant a daisy becomes as *Chrysanthemum leucanthemum* when *anthos* is "flower," *chrysos* Greek for "gold," and *leuco* Latin for "white." Daisy becomes "golden flower, white flower," and this is just the beginning.

I became intrigued with the Latin trans-

lations one hot and endless summer afternoon, while weeding the bleeding heart bed. Weeding, as we all know, is terribly overrated, and hours of it can plunge the weeder into a moronic stupor, or force the mind to wander into new territory. Which state I was in this particular afternoon I am not sure, but I began to wonder — why is bleeding heart named *Dicentra eximia*? What does that mean? How does its species name distinguish it from other *Dicentra*? That evening I found myself at the library settled down with *Hortus III*, the horticulturist's bible, and *The New Latin Dictionary*. (It seems Latin isn't very popular; I found it way in the back crammed

continued



Hemerocallis fulva – Beauty for a day; *fulva* is tawny, “of lions, wolves, sand and gold.”

between *Teach Yourself Urdu* and *The Finnish Phrase Book*.) I was almost sorry I asked.

I discovered that *dicentra* means “two spurred.” *Dis* in Greek means “twice,” and *kentron* is “spur.” All *Dicentra* flowers have two spurs (a spur is the tubular projection that secretes nectar). *Eximia* means “out of the ordinary.” *Dicentra eximia* has very finely toothed leaves, which do make it an out-of-the-ordinary member of the *Dicentra* genus. I discovered it helps, when trying to decipher its meaning, to think of a botanical name as a person’s name, only in reverse order. For example, John Smith would be the equivalent of *Eximia dicentra*. All members of John’s clan are Smiths and all members of *Eximia*’s clan are *Dicentras*. *Eximia* is the *dicentra* with finely cut leaves and dark pink flowers, and John is the Smith with glasses and a wart on his nose.

Translating the scientific names can help in “knowing” a plant that is otherwise unfamiliar. *Pterocarya fraxinifolia* is a plant with which most of us, I assume, are unfamiliar. If we break the name down, we find

pteron is Greek for “wing,” as in *Pterodactyl*, the prehistoric winged dinosaur. *Carya* is a genus of trees that includes the hickory; all trees in this genus bear nuts. *Pterocarya* translates as “winged-nut tree,” and indeed this tree bears one seeded winged fruit. Take the species name *fraxinifolia*. *Fraxinus* is the genus that includes the ash tree, and *folia* in Latin means “leaves or foliage.” The leaves of the *Pterocarya fraxinifolia* are like the leaves of an ash. *Pterocarya fraxinifolia* is a tree with winged nuts and ash-like foliage. Not a bad description for never having seen the plant! It would be possible to recognize this tree in a garden just by the translation of its botanical name.

Of course all plant names do not work out this neatly. I have had trouble with the genus name *Dodecatheon*. In Greek *dodeka* means “twelve,” and *theos* means “god.” “Twelve gods” for the little shooting star? It is a charming little plant but can it live up to a name like that? Another puzzle to me is the genus name *Leucothoe*, the broadleaved evergreen shrub occasion-

ally used in landscaping. *Leucothoe* was the daughter of the eastern king *Orchamus* and his wife *Eurynome*. How does this relate to the broadleaved shrub? Was there an ancient myth about the young girl *Leucothoe*? It will take a super investigator, a horticultural Holmes to decipher this one.

When trying to figure out these Latin and Greek puzzles, care must be taken not to jump to conclusions. The specific epithet *septemfida* led me to assume the plant bloomed in the fall. But after digging a little deeper, I learned that in Latin *septemfida* means “having seven clefts.” *Septem* is “seven”: September was the seventh month on the Roman calendar which start-

Weeding, as we all know, is terribly overrated, and hours of it can plunge the weeder into a moronic stupor, or force the mind to wander into new territory.

ed with March. Another example of a confusing species name is *florida*. Since the species *canadense*, *pennsylvanica*, and *virginiana* mean, roughly, that the plant with that name is native to that region, we might think *florida* would also follow. Sorry; *florida* actually means “flowering” in Latin. The state of Florida took the name of “flowering.” It would take some searching to find a plant like a *Cornus florida* (flowering dogwood) in Florida. The species epithet *speciosa* is another problem. It does not mean that the plant is a species (not a hybrid) but translate the Latin *speciosa* as “showy.”

Many Latin roots are used over and over in different combinations. For example:

The suffixes *phyllum* and *folia* mean “leaf”:
pentaphyllum: *penta* = five, five leaved
blepharophylla: *blepharo* = eyelashes, leaves like eyelashes
filifolia: *filia* = thread, thread-like leaves
cardiophylla: *cardio* = heart, heart-shaped leaves
microphylla: *micro* = small, small leaved
trichophylla: *tricho* = hairy, hairy leaved

Anthus simply means “flower,” so in combination:

chionanthus (white fringed tree): *chion* = snow, snow flower
chimonanthus (wintersweet): *chimon* = winter, winter flower
calycanthus (sweet shrub): *calyc* = calyx, flower-like calyx

Phila means “lover” or “love”:

petrophila: *petro* = rock, rock lover
helio = sun, sun lover
chimaphila: *chima* = winter, winter lover
gypsophila (baby’s breath): *gypsum* =

chalk, chalk lover
philodendron: *dendron* = tree, tree lover
 (alludes to its climbing habit)

Carpa is "fruit":

lasiocarpa: *lasio* = woolly, woolly fruited
macrocarpa: *macro* = large, large fruited
callicarpa: *callis* = beauty, beauty berry

Often a genus or species name is the name of the plant's discoverer or honors an associate of the discoverer:

Juniperus sargentii – Dr. Sargent was an early director of the Arnold Arboretum; this variety was named for him by Augustine Henry, a collector of Chinese plants.
Tsuga sieboldii – Named for Philip von Siebold, a Dutch plant collector, by Elie Carriere, a French editor of *Revue Horticole*.

Thunbergia fragrans – Carl Thunberg was a Swedish botanist. Linnaeus named this plant for him.

Fothergilla – William Bartram named this shrub for his friend and wealthy patron, Dr. Fothergill.

Franklinia altamaha – The discoverers, John and William Bartram, named this for their friend Ben Franklin and the Alta-

maha River where this plant was first found.

A plant's specific name is often a place or habitat:

amurensis, from the Amur River area between Manchuria and the U.S.S.R.
afer, of North Africa
aethiopia, African; same root as Ethiopia
alpina, of the mountains
yedoensis, Yedo, Tokyo
dinarica, from the Dinaric Alps
littoralis, of the seashore
siculum, from Sicily
sylvestris, of the woods
emodi, Mt. Emodus in the Himalayas, India
palustris, from the Latin *palus*, a swamp or marsh. Of the swamp.

Here are a few miscellaneous descriptive epithets:

hirta, with small hairs
glabra, smooth (from the Latin *glaber* = bald)
glauca, greyish
lutea, yellow
acaulis, a = without; *caulis* = stem: without a stem

ovata, egg-shaped: from *ovum* = an egg
nutans, drooping or nodding: from *nuto* = to nod

subulata, pointed and sharp like an awl: from the Latin *subula*, a shoemaker's awl.

Some of these translations also help in deciding the correct culture of a plant that is unfamiliar. Any plant with the species name *littoralis* would probably not do well in the same location as a *sylvestris* or *alpina*. Do you want to know if a plant is native to the United States? If it is an *orientalis* or *amurensis* chances are, it is not.

These are just a few of the puzzle pieces, a sample of what can be learned by looking closely at botanical names. Some words are obvious – *cardinalis* is "red," *maximum* is "large" – but others take a little work. It helps to remember that botanists and scientists are logical and methodical, and there is always a reason why a name is given to a particular plant. Keep digging and the reason, the translation, will be found, no matter how obscure. With every new plant learned a new name also comes up, and with a little research and a healthy dose of curiosity, you, too, can be a Latin lover.

SOME COMMON GARDEN PLANTS AND THEIR MEANINGS

Gladiolus = *gladius* = sword, small sword

Hemerocallis fulva (common daylily), from the Greek *hemera* = day, *kallos* = beauty; beauty for a day. *Fulvus* = tawny, yellowish brown, "of lions, wolves, sand and gold."

Impatiens = Latin for "unable to endure," impatient. Refers to the seeds shooting when touched lightly.

Lamium = Greek for throat allusion to open corolla

Myosotis (forget-me-not) = *myos* = mouse, *ous* = ear; leaves are like mouse's ears.

Primula = first; primulas are very early bloomers.

Rhododendron = *rhodo* = rose *dendron* = tree; rose tree

Sedum = to sit; sedums are usually prostrate on the ground.

Sempervivum = *semper* = always, *vivum* = to live; live forever

Silene, from the Greek *sialon* = saliva. The sticky secretion catches flies.



Rhodo (rose) dendron (tree)

Jody Petersen is a student at the Arboretum School of the Barnes Foundation and the gardener at the Brandywine River Museum. She also professionally installs and maintains perennial gardens.

Letters to the Editor

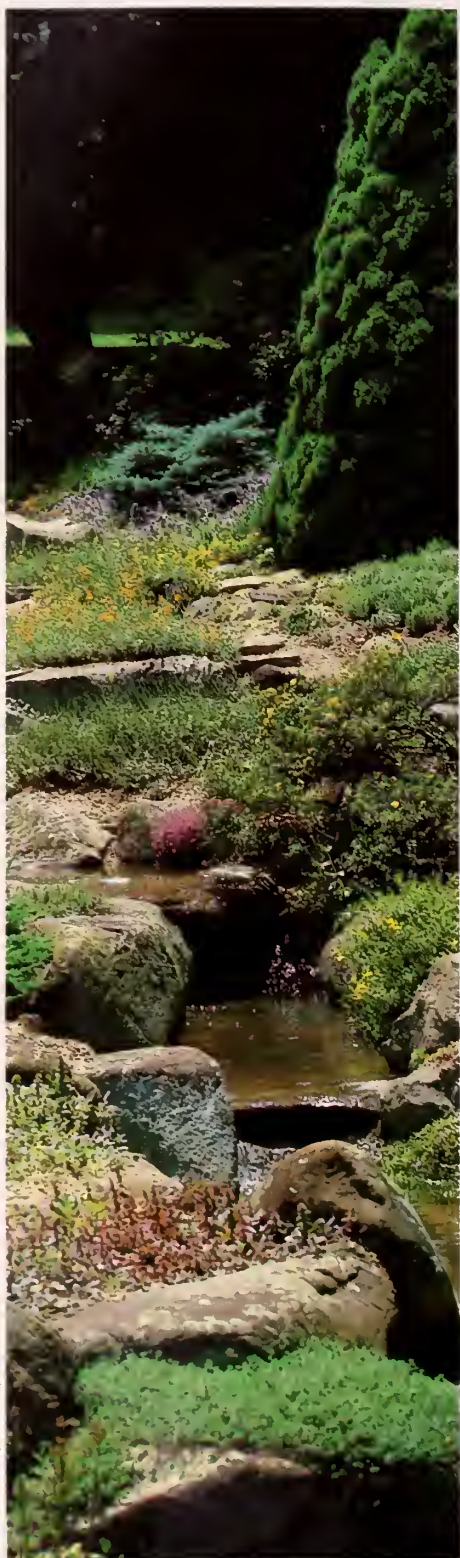


photo by Dick Keen

Perennials in a rock garden

perennials

I have just read your editorial "More About Perennials" in the September/October 1984 issue of the *Green Scene*, and I want to add some information.

The American Rock Garden Society is 50 years old and has 4,000 members dedicated to growing perennials. As such, we have a seed list each year in excess of 3,000 different perennials. We have propagated, and given, and traded perennials amongst ourselves and to nurserymen over the last 50 years.

For a great number of years it has been mostly the nurserymen from Colorado and west who have been propagating and distributing interesting and new perennials. I am happy that the nurserymen and customers in this area are more and more recognizing and supporting the interest in perennials.

I agree with Darrel Apps as to the American gardeners' new sophistication because of travel, etc. So, we welcome our compatriots in gardening and horticulture sharing what we have been doing for 50 years. It's nice to finally have company.

Lee M. Raden
Vice President
The American Rock Garden Society
Charlestown, PA

hosta names

Your July-August 1984 issue about perennials is outstanding, providing much useful information. I am sure it will become a collector's item.

Unfortunately, some of the hosta nomenclature is incorrect.

The beautiful blue-leaved hosta in photograph D on page 13 is *Hosta sieboldiana*, not *Hosta glauca*. The intensity of the glaucousness and the roundness of the leaves indicate that it is probably *Hosta sieboldiana* 'Elegans,' a cultivar that is very popular.

Hosta sieboldiana (Lodd.) Engl. replaced the name *Hosta glauca* (Siebold ex Miq.) Stearn many years ago; see *Hortus Third*, page 50.

In the list on page 23 in the perennial issue is another incorrect name: *Hosta japonica*. I believe the author is referring to *Hosta lancifolia*, a common all-green-leaved species.

I was pleased to find hosta included in the top ten in Eugene Jackson's article on page 34, but was disappointed not to see hosta listed in the very best ranking on page 35.

Warren I. Pollock
Chair, The American Hosta Society
Committee on Nomenclature
Wilmington, Delaware

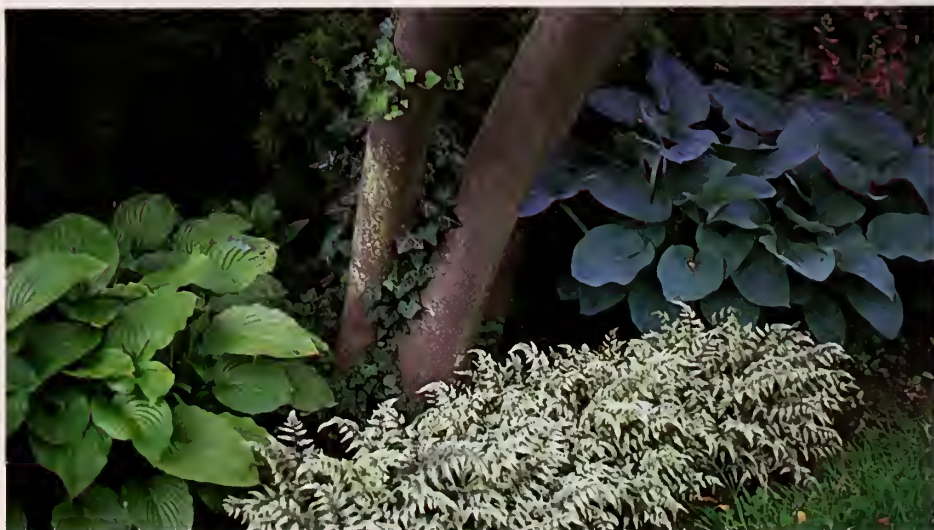


photo by Viola K. Anders

The blue-leaved hostas on the extreme right were once called *Hosta glauca*; they are now called *Hosta sieboldiana*.

liriope – not a grass . . .

Thanks for a timely, thoroughly enjoyable issue devoted to perennials (July). One comment about "Making a Career of Perennials." While referring to ornamental grasses, the article states that Bill Mitchell offers "over one hundred varieties including *liriope*..." which seems to include *liriope* as one of the grasses. As Bill is quick to point out, *liriope* is a member of the lily family.

While my bias is admittedly botanical, as a home gardener I often benefit from knowing how the family affinities of plants relate to their use and performance in the garden.

Rick Darke
Assistant Taxonomist
Longwood Gardens
Kennett Square, Pennsylvania

I enjoyed the July-August *Green Scene*I did find one correction that you might pass on. Page 11, "Making a Career of Perennials": Ornamental grasses do not include *liriope*. *Liriope* is not a grass but a member of the lily family, *Liliaceae*. It does have attractive grass-like foliage, forming mats, ideal as a groundcover in semishade and some sun. The 6-in. to 8-in. spike-like flower blooms in August and September, usually showing above the grass-like foliage. Species in this area: *Liriope spicata* (flower ovary superior) and *Ophiopogon japonicus* (flower ovary inferior). Both are excellent sod-forming plants.

My favorite article was probably "The Best and Worst of the Perennials" by Eugene W. Jackson.

Perhaps my one criticism would be not enough specific perennials mentioned for the shady garden. With trees of summer coolness, there are still blooming perennials for enjoyment:

Cimicifuga racemosa, snakeroot, white flower spike grows 2 to 3 ft. Background, July.

Aruncus dioicus. Blooms in late May, early June. Plume-like white flower.

Betty Derbyshire
Green Lane, Pennsylvania



Happy Holidays to our readers.

27

the plant finder — A free service for *Green Scene* readers



If you can't locate a much wanted plant send your name and address (include zip), the botanical and common name of the plant to Plant Finder, *Green Scene*, PHS, 325 Walnut St., Philadelphia, PA 19106. People who have the plants or seeds you want will contact you to make arrangements about selling or giving them away, mailing, etc.

NATURE'S WONDERFUL MYSTERIES

the Disparities Between Science and My Uncle Tom's Explanations



by Marvin Berg

Gardening and exploring nature in general should be relaxing and satisfying, and I have finally reached that stage. But I must admit that there were times when some strange phenomenon became quite irritating if I did not understand it. Some of the answers I received to the profound questions I posed were about as useful as a trapdoor in a rowboat. Others, like those offered by my Uncle Tom, were both whimsical and joyous.

Take the peanut plant, for example. My Uncle Tom introduced me to this oddball when I was twelve. The fresh-turned soil was already warm and heavy with the odors of spring when he informed me that we were going to plant peanuts. (To me, a city boy, this made about as much sense as planting bottle caps.) I went along with his scheme but, about a week or so later, I was struck with the brilliance of this man as the little plants broke through the soil.

As the season progressed the plants developed rather pretty yellow flowers. Following this colorful display they formed thread-like branches, each tipped with a small appendage, which my uncle called "pegs." But the greatest thrill of all was yet to come — the morning I discovered that these little fellows had buried themselves (or had been buried) in the sandy soil. Now here was a real mystery! I watched carefully for the next few days, but it seemed to be a question of "now you see them and now you don't."

I sought out Uncle Tom who, not one to be miffed by simple puzzles, gave me the answer. Or at least his version of it. It seemed, he explained, that there is this "peanut peg beetle" who can't stand the sight of those pegs cluttering up the landscape and so he scurries about and buries them all as fast as he can. Now this explanation seemed somewhat less than perfect but, until something better came along, it had to do. At least it kept me quiet while I pondered alternatives.

Another mystery that plagued me surfaced that same year while I was visiting my aunt and uncle during my Christmas

vacation. The temperature fluctuated between 10° above to 10° or 15°F. below the freezing point. Each morning my uncle would peer at the rhododendron just outside the kitchen window and quote the temperature within a few degrees. He was a crafty old bird, and I figured that he had a thermometer stashed away somewhere known only to him. But he continued to perform this trick — whether near the house or in the field — just so long as there was a rhododendron in sight.

Brassica oleracea, for example, responding to man's manipulation, has produced six different vegetables. By emphasizing certain parts of the original plant, man has developed cabbage (terminal bud), cauliflower (flower), kohlrabi (stem), brussels sprouts (lateral bud), broccoli (stems and flowers), and kale (leaves).

Finally I coaxed the secret out of him. At the freezing point (32° Fahrenheit) the leaves begin to droop and curl somewhat. As the temperature continues to drop they hang ever lower on the branch and begin to form a tube. The process continues until, at 10°, they are rolled as tight as a Havana cigar and hang perpendicular to the ground. It was fun to arise each morning and predict the temperature and then check for accuracy. A few mornings I missed the mark by more than a few degrees and years passed before I realized that there are correction factors that must be applied at times — the morning sun on the leaves, the wind velocity.

My uncle's explanation for this marvelous phenomenon? There is a rhododendron worm that lives on the shrub's leaves. As the temperature drops it wraps the leaf tighter and tighter about itself to keep warm. Since I have always been rather scientific in seeking answers I could easily see through the weakness of this story. It didn't take a genius to figure out that there couldn't possibly be enough worms to go around. But, rather than be disrespectful, I

dropped the subject.

the mystery of the considerate seed

All of which leads up to another mystery that fascinates me to this very day: the seed. Take timing, for example. My uncle always planted a short row of lettuce just before winter set in, which meant that he would be the first to enjoy a garden fresh salad come spring. But why didn't those seeds sprout during the winter? Why were they considerate enough to wait until spring rather than have him dig for it under a foot of snow? Just about anyone can tell it takes just the right temperature, but who can tell you why?

One year I planted the bright red seeds of the jack-in-the-pulpit (*Arisaema triphyl-lum*). For a few years I diligently sought some sign of seedlings and then gave up. A few more years passed before I happened to remember them again. There they were, a cluster of little plants. Why five years? What clever little device sets the magic in motion?

Consider other fascinating things about the seed. Lying there, under the soil, the roots eventually grow downward and the stems upward. Or, think of the variations possible within all growing things. This most remarkable mystery of all revolves around the tremendous genetic pool that exists in plants and animals. The mustard plant (*Brassica oleracea*), for example, responding to man's manipulation, has produced six different vegetables. By emphasizing certain parts of the original plant, we have developed cabbage (terminal bud), cauliflower (flower), kohlrabi (stem), brussels sprouts (lateral bud), broccoli (stems and flowers), and kale (leaves). Because of this strange ability, we have enjoyed, and will continue to enjoy, the wonderful new varieties we look for in the colorful seed catalogs each year.

I never have had the nerve to ask my uncle about these mysteries of development. It is doubtful (being the simple, self-educated man that he was) if he would have mentioned, or even suspected the existence, of dominant and recessive

Nature's Own Thermometer



Rhododendron at 15°



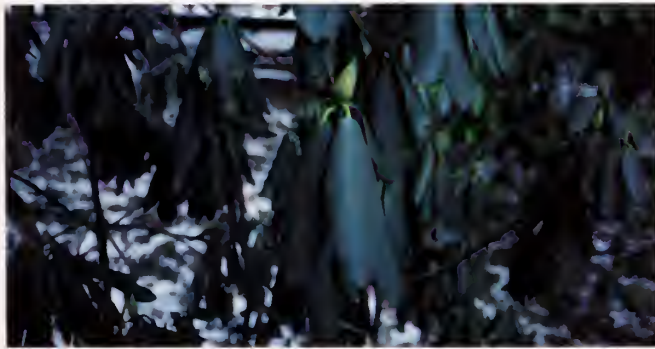
Rhododendron at 25°

genes that are within those versatile pellets we sow and which supply us with such amazing diversity. But I can almost guess at his imaginative, ingenious and wonderful revelation. "It seems," he would begin, "that there is this little bug inside the seed who is in charge of all these chores. . . ."

So, then, what is the final word on these wonderful mysteries? When all is said and done, a clear understanding of the scientific basis for these miracles shouldn't prevent us from enjoying these brilliant displays that we meet along the way. It is enough that we watch them unfold as we discover each in its own time. If, while watching the magician's act, his secrets were always known, the magic would not exist. I believe I was just as content (perhaps more so) when, as a lad, I would watch the full moon sailing across a cloudless sky, secure in the belief that it was made of green cheese.

•

Marvin Berg writes for *Organic Gardener*, *Mother Earth*, *Gardens for All* and *Family Food Garden*. He gardens on 25 acres in Mayport, Pennsylvania, and particularly enjoys experimenting with wildflowers.



Rhododendron at 35°

photos by Marvin Berg



Rhododendron at 45°

METASEQUOIA:

Re-established in North America
After a 13 Million Year Absence

 by DeWitt Hamilton

Thirty-five years ago metasequoias were thought to be extinct. Like dinosaurs, the tree was known only from fossils until it was found growing in a remote mountainous region of western China. Discovering a tree assumed to have been extinct for millions of years was comparable to finding a dinosaur walking around – alive and well. In fact, the tree was called a “living fossil.”

The briefest outline of the discovery of the metasequoia is that in 1941 a Japanese paleobotanist had placed unidentified fossils in a new genus, *Metasequoia*. Incredibly, later the same year the living tree was found. Samples, collected from trees whose identification puzzled Chinese botanists, were compared with the newly classified fossils and found to be the same.

30

Grove of metasequoias (*Metasequoia glyptostroboides*) at Morris Arboretum in the winter show the delicate branches and typical pyramidal habit.

Since the war in China made communication and transportation difficult, metasequoia seeds sent by Chinese botanists to the Arnold Arboretum in Boston did not arrive until 1948. Arnold Arboretum immediately distributed the seeds to gardens and arboreta introducing or re-introducing the deciduous conifer to North America after an absence of at least 13 million years. Seeds were planted and thrived. Today metasequoias grow in the Delaware Valley in private gardens and on the grounds of botanical institutions.

My introduction to the tall pyramidal metasequoia with the buttressed trunks was as a garden guide at Winterthur. I am one of eight garden guides who give tours of Winterthur's gardens from an open-air tram that runs from mid-April to mid-November. During each tour of the gardens, the tram stops in front of the tree. The visitors are fascinated with metasequoias. They ask questions about both the story of its discovery and the tree itself. They also ask about the tree's cultural needs, hardiness, growth rate and propagation. Out of these questions have grown my own interest and enthusiasm.

propagation

The propagation of metasequoias has been carefully recorded since the arrival of the first two pounds of seed in 1948. Those first seeds sent from China sprouted within two weeks and had a high rate of germination. When trees grown from the original seeds produced seeds, most of the seeds did not sprout when planted. One magazine article stated that in 1970 only six seeds produced by trees growing in the United States were known to have germinated. On the other hand, metasequoias grown from the original seed batch propagated easily from both hardwood and softwood cuttings. There was no lack of asexually propagated metasequoias. According to Paul Meyer, assistant director for horticulture at Morris Arboretum, as the trees have grown older the picture has reversed. The trees now produce viable seeds that will germinate, but are more difficult to propagate from cuttings.

Although it was about 25 years before metasequoias began to produce reliably viable seeds in this country, metasequoias are usually easy to grow from seed today.

The metasequoia seeds look like oatmeal flakes when they are shed from the cones formed in late summer. Like a moun-

tain laurel bud, the metasequoia cone with its precisely incised scales is a small natural jewel worth examining each year when it appears. To produce fertile seeds, the tree must also produce microsporangiate strobili, which look like tassels hanging from the top two-thirds of the tree. The tassels, produced in late summer, remain on the trees throughout the winter and release pollen in early spring, fertilizing the ovules encased in the cone.

Metasequoias are usually easy to grow from seed today. Seed require no pretreatment before planting. Collected in October and stored in moist sphagnum moss enclosed in a plastic bag, they can be kept in the crisper of a refrigerator. In early spring (February) sow them in a flat filled with sand. Cover with polyurethane plastic. Seeds sprout in two to three weeks. After young seedlings are about 2 in. high, put them into peat pots. Transplant them

continued



The metasequoias pictured on the left are now fully leaved for summer.

when the roots show on the outside of the peat pots.

Softwood cuttings should be taken when the new growth is almost hardened, probably in mid- to late June, and treated with Rootone, then stuck in sand to root.

Although usual horticultural practice is to take cuttings from young plants, Rick Lewandowski, plant propagator at Morris Arboretum, had 99% rooting on hardwood cuttings collected from sucker sprouts on the oldest metasequoia growing at Morris

Thirty-five years ago metasequoias were thought to be extinct....Discovering a tree assumed to have been extinct for millions of years was comparable to finding a dinosaur walking around – alive and well.

Arboretum. The tree grew from one of the original seeds sent from China and started by Morris Arboretum propagators in 1948. Cuttings from two-year-old wood, were taken on March 24, 1983 and had rooted by June 2, 1983. Cuttings were treated with 8,000 ppm (.8%) indolebutyric acid, stuck in a flat filled with half peat and half perlite. (Sand can be used.) They were put under mist in the greenhouse. However, polyurethane plastic tents may be used to cover the cuttings.

an ornamental

For a while it appeared metasequoia might be both a "living fossil" and commercially useful for timber. It grew fast and straight. Unfortunately, the wood produced by metasequoias in the United States was too soft to use as a building material. Metasequoias have been used primarily as ornamentals.

Metasequoia is more robust than its American cousin, the bald cypress. It is difficult to distinguish between the two trees at a distance but its conical habit, though similar in outline, is more solid, less feathery. It may, like the bald cypress, become rounded at its crown as it grows older. A photograph taken in the Chinese village of Modaoqi where the tree was first seen growing shows a large tree with a precise pyramidal habit. The tree was estimated to be 420 years old. It may be a long time before anyone needs to worry about how a tree so long-lived develops in old age.

No one really knows how tall metasequoias will grow in this country. Currently bald cypress is the tallest tree on the East Coast reaching 150 ft. (It is still only half the size of coast redwoods and giant sequoias growing on our West Coast.) The trees found in China had a mature height of 100



photo by Philip G. Correll

Light fern-green metasequoia foliage with immature stemmed cone. The stem or peduncle is one characteristic used to distinguish metasequoia from bald cypress, which has a cone with no stem.

to 115 ft. So far metasequoia (Zone 5) has proven a little less hardy than bald cypress (Zone 4) but will grow as far south as the bald cypress.

The growth rate of metasequoias is rapid. In 1968 after metasequoias had been growing in the United States for 20 years, the Arnold Arboretum evaluated and measured the seedlings it had sent out. Some trees had grown 5 ft. in a single season although this growth rate was not

consistent year after year. The tree at Winterthur was the third largest in this country at 58 ft. Metasequoias at Longwood Gardens and Morris Arboretum were 50 ft. tall. In 1968 the tallest metasequoia in the United States, 68.3 ft., was growing on the College of William and Mary campus, Williamsburg, Va. Thirteen years later, in 1981, when metasequoias were measured again, the tree in Williamsburg was 120 ft. and the one at Winterthur had reached 78 ft.



Metasequoia's fall foliage



Fall grove of metasequoias at Morris Arboretum.

Metasequoias can be used in the landscape in three ways: planted singly as specimens, planted in a grove and lined along allées. You can see examples of metasequoias used both as specimen trees and in a grove in the Delaware Valley. The metasequoia at Winterthur, given as a seedling to Henry du Pont in 1948, but not actually set out until 1951, is planted as a specimen surrounded by a great expanse of lawn. The metasequoia stands on the outskirts of a pinetum or collection of conifers, which looks like a huge tapestry of different shades of green from a distance.

At Morris Arboretum, metasequoias are planted informally creating a small grove along a stream. In summer the little grove has a lush, green, primeval quality. In winter, the metasequoias are especially appealing when their finely textured twigs are covered with ice or their whole spire-like form with snow. The Morris grove is an example of naturalistic planting that is appropriate and in balance with its surroundings. Metasequoias in the grove at Morris Arboretum were planted in 1953. Already they appear to be as tall as trees grown from the original seed lot received in 1948, planted on higher ground. One study found that metasequoias planted in moist sites grew two-thirds faster than those on high ground.

continued



Buttressed trunk of oldest metasequoia at Morris Arboretum grown from seeds sent from China in 1948.

Since metasequoia is deciduous, it is best planted with other deciduous trees. Grouped with other conifers (usually evergreen) metasequoia sometimes looks like the only one that died when it loses its needle-leaves for winter around mid-November. Last year near the end of January, a neighbor announced that there was a big dead pine tree on his street that should be cut down immediately. It was a denuded metasequoia.

Used as street trees in Maplewood, NJ, metasequoias are not affected by pollution like most conifers. Possibly, losing their leaves contributes to their immunity to pollution. They grow well in the narrow area between sidewalk and curb. Like river birch and swamp maple, which also naturally grow in and near water, metasequoias can grow with little oxygen for their roots.

Metasequoias can adapt to many different growing conditions. Because of their rapid growth rate, they may be one answer to a mobile society's demand for instant gardens and landscaping. They require no maintenance unless you have a compulsion to rake up their fallen branchlets in autumn. They take up no more space than a mature dogwood — a diameter of about 25 ft. There are a few exceptions but they are generally not bothered by any pests. One requirement of today's gardeners that metasequoias do not meet is moderate height. (Any tree over 60 ft. is considered tall.) In the years metasequoias have grown in the United States, however, they have become valuable ornamentals for our gardens as well as botanical oddities.

DeWitt Hamilton works as a garden guide at Winterthur Museum and Gardens. She has studied ornamental horticulture and landscape design at the University of Delaware



GET A JUMP ON CHRISTMAS: Give a **GREEN SCENE** Subscription to your family or friends. A BARGAIN AT \$8.50.

SEND SUBSCRIPTION TO:

FROM:

_____	_____
_____	_____
_____	_____

Return check and coupon to **Green Scene, PHS,**
325 Walnut Street, Phila. 19106

classified ads

IT ISN'T EASY BEING GREEN unless you have a QED residential Lord and Burnham greenhouse added to your digs. We design, erect, and equip to satisfy your rules of green thumb. Grow anything green year-round (except perhaps frogs). **QED, INC.**—offering expected amenities to the Philadelphia Main Line and Chestnut Hill. 688-1514. P.O. Box 161, Villanova, PA 19085.

Specializing in the Unusual ... Dwarf rhododendrons, deciduous and evergreen azaleas, dwarf evergreens, companion plants. Catalog \$1.00, refundable. The **Cummins Garden**, 22 Robertsville Road, Marlboro, NJ 07746. Phone: 201-536-2591

OUTDOOR FURNITURE

To replace or replace

Hill Co.

8615 Germantown Ave.
247-7600

Seasonal decorations of all types ... especially herb wreaths, brooms, herb arrangements, grapevine items, herb plants, **HERB gift baskets** including live plants, tea, potpourri, dip and more (year-round) dried herb bunches.

Complete nursery, especially nature plants and unusual native plants. Beautiful live Christmas trees, ready to plant, freshly dug in our fields.

Triple Oaks Nursery & Florist

Rt. 47 S. Delsea Drive
Franklinville, NJ 08322
1-609-694-4272

Visit the Yule Tree Shop at J. Franklin Styer Nurseries for this Christmas decorating and gift giving treasures. Features of this season's Yule Tree Shop include:

- Lighted ceramic houses, churches and shops; Victorian tree trimmings and porcelain headed dolls; Italian creche figures and a special array of stocking stuffers.
- The Yule Do-It Shop offers handmade custom decorated wreaths, door swags and centerpieces of greens fresh from the nursery — and as the name implies all of the items needed for the do-it-yourself decorator.
- Gifts for your gardening friends include handmade pottery, garden ornaments, garden tools, plants, books and Philadelphia Flower Show tickets.

J. Franklin Styer Nurseries

914 Baltimore Pike
Concordville, PA 19331
Telephone: 459-2400



ARBORICULTURE SERVICES

Custom Pruning and Complete Care of Trees and Shrubs to Promote Healthy Attractive Plants

McFARLAND LANDSCAPE SERVICES

Phila. - 438-3970
East Mont. Co. - 646-7222
Main Line - 688-6644

ROSE VALLEY NURSERIES

Recipient of the 1983 Philadelphia Flower Show, Inc., Silver Trophy. Visit our garden center and landscape design office for seeds, plants, and plans. Staffed by professional horticulturists. 684 S. New Middletown Rd., Media, PA 19063. (215) 872-7206.

WOODLANDERS

RARELY OFFERED DIXIE NATIVES AND INTRODUCTIONS, woody, herbaceous, all nursery-grown. Many hardy northward. Send S.A.S.E. (long) for mail-order list. WOODLANDERS GS, 1128 Colleton Ave., Aiken, SC 29801.

DWARF & UNUSUAL CONIFERS, JAPANESE MAPLES. Visitors welcome. Educational dwarf conifer display. Send 80c in stamps for informative booklet. Phone 609-585-5387. **Dilatush Nursery**, 780 Rte. 130, Robbinsville, NJ 08691

LAUREL HILL GARDENS 8125 GERMANTOWN AVE. CHESTNUT HILL, PA 247-9490

- Over 250 varieties of select herbaceous perennials, wildflowers, and ferns.
- Flowering, unusual, and rare trees as well as tried and true varieties
- A large selection of arranging & Bonsai supplies
- Fancy and standard clay pots
- Landscape design and installation services
- Stop in and discuss your needs with one of our staff horticulturists

LAUREL HILL GARDENS

GREENHOUSE REPAIRS AND MAINTENANCE

Sales and Construction

GEORGE C. MATT, INC.

212 St. Georges Road, Ardmore, PA 19003
215-649-2745

FRESH HERBS - grow your own this winter under lights in our automatic, hydroponic herb patch. Proven system. High yields. Complete system including light fixture and growing instructions \$100.00.

GROWTH UNLIMITED

Box 284
Bensalem, PA 19020

GREENHOUSES AND SUNSPACES

Complete Design and Construction of Greenhouses for Residential or Commercial Growers. Double glazed tempered glass with maintenance-free aluminum on the outside and clear cedar on the inside. We are also the area dealer for **Vegetable Factory Greenhouses** which have double acrylic panels, either clear or frosted and, because no foundation is needed, they are an easy do-it-yourself project. Contact **TOTAL SOLAR, INC.** 279-6646.

Green Scene covers, full page pictures, maps, newspaper articles laminated and framed. Ideal Christmas gift. Call **SIGN PRINTERS**, 215-825-8799. For further information, write Box 2, Miquon, PA 19452.

Give a lasting gift this holiday. **The Tyler Arboretum Bookstore** offers a complete selection of quality books on Horticulture and Natural History. Special order service available. 515 Painter Road, Lima, PA 19037. Telephone (215) 566-9133.

Introducing Flora-Feed, fantastic plant food. Only pennies per plant per month. For free sample send 39c postage/handling. Pan-Nutrition Inc., 380 Parry Road, Warminster, PA 18974.

PLANTED TOPIARY SCULPTURES. Many designs. Shipped anywhere. Free catalog. Credit cards & phone orders. 215-925-4125. **EXOTIC BLOSSOMS**, 510 South 5th Street, Philadelphia, PA 19147.

Sunrooms - Greenhouses
Redwood Window Greenhouses
Full Size Samples on Display
Aluminum, Redwood, Swedish Fir
Custom Design and Installation

SunSpaces Inc.

Main & Walnut Sts.
North Wales, PA 19454
215-699-3747

GIFTS FOR GARDENERS

Is there a gardener on your Christmas list? **GARDEN ACCENTS** has the largest variety of antique and modern garden ornaments in the Philadelphia area. Our selection includes everything from functional iron foot scrapers and guaranteed squirrel-proof feeders to elegant copper and lead bird baths, decorative bronze hoseguards, faucets and windchimes, handmade terra cotta planters, Chinese, Italian and English statuary, fountains, sundials, and benches. No matter what your budget, you'll be able to find something special.

GARDEN ACCENTS is located at J. Franklin Styer Nurseries, 914 Baltimore Pike, Concordville, PA 459-2400.

BRITISH TEAKWOOD GARDEN SEATS — priced from \$260.00. Many styles including Chippendale and Warwick — the National Herb Garden's choice. 16-page catalog \$1.00. Country Casual, Suite 205, 17317 Germantown Rd., Germantown, MD 20874. (301) 540-0040.





Gretchen Lea's "Santa's Christmas Snack" entry in the 1983 Pennsylvania Horticultural Society Holiday Show. See page 14.



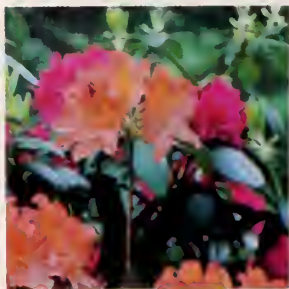
THE
**green
scene**

HORTICULTURE IN THE DELAWARE VALLEY
JANUARY • FEBRUARY • 1985 \$1.50

Exotica in the Italian Market.
See page 12.



4



15



20



24



3. All Plants Wait for Something

Jean Byrne

4. The Maze at Deerfield

Derek Fell

8. The Survival of the Fittest: Tough Plants for City Gardens

Patricia Schrieber

12. Exotica in the Italian Market

Charlotte Archer

15. Carnivorous Plants: What Are They? What Do They Want?

Richard M. Adams, II

20. Coenosium Gardens: A Conifer Collection that Started on a City Lot

Peter Loewer

24. Riverside Gardening in Sand and Wind

Jane Castle Borie

28. The Fairy Rose

Bertha Reppert

30. Witch-Hazel's Weird but Wonderful Relatives: A Gardener's Perspective

Rick J. Lewandowski and Paul W. Meyer

33. The Plant Finder

33. Management Statement

34. Blow Thou Winter Wind Winter Composting

*Helen M. Roback
Coffee Can Bird Feeder
Marie Burns Judge*

35. Classified Advertising

Front cover: Sonny D'Angelo prepares a suckling pig in his shop in the Italian Market. The orchid is *Cymbidium* 'Rosy Greer.' The glistening, spiky anthurium, yellow freesia and ti leaves fill in around the orchid.

photo by Edmund B. Gilchrist, Jr

Back cover: photo by Derek Fell

Volume 13, Number 3

January/February 1985

THE PENNSYLVANIA HORTICULTURAL SOCIETY

325 Walnut Street, Philadelphia, Pa. 19106

Telephone: 215-625-8250

Horticultural Hotline: 215-922-8043

Robert S. Ryan / *Chair*

Jane G. Pepper / *President*

Jean Byrne / *Editor*

PUBLICATIONS COMMITTEE:

Adele G. Greenfield / *Chair*

Judy Foley / *Vice Chair*

Kathryn S. Andersen

Darrel Apps

Anne S. Cunningham

Charles W. Heuser

Natalie Kempner

James J. McKeehen

L. Wilbur Zimmerman

Designer: Julie Baxendell, Baxendell / Lambeck Associates

Separations: Lincoln Graphics **Printer:** Havertown Printing

THE GREEN SCENE, (USPS 955580) Volume 13, No. 3, published bimonthly, January, March, May, July, September, November, by the Pennsylvania Horticultural Society, a non-profit membership organization at 325 Walnut Street, Philadelphia, PA 19106. Subscription: \$8.50 - Single Copy: \$1.50. Second class postage paid at Philadelphia, PA 19106. • **POSTMASTER:** Send address change to THE GREEN SCENE, 325 Walnut Street, Philadelphia, PA 19106.

Pennsylvania Horticultural Society, 1985

Green Scene subscriptions are part of the membership benefits for:

Pennsylvania Horticultural Society

Maryland Horticultural Society

Frelinghuysen Arboretum

Skylands Arboretum

Blithewold Gardens and Arboretum

All Plants Wait for Something ...

 **by Jean Byrne**

"All plants wait for something, so at least it seems to me. For most it is the rain, the sun, or the turning of the seasons. Or perhaps some compost to help them flourish. All the while they work mutely in place."

Richard M. Adams, II

I changed my mind when I looked at the writing samples that Richard Adams showed me. I had not wanted to publish another story about carnivorous plants at this time, but in the quote above Adams had neatly wrapped his mind around a process of nature and with a simple perception made me feel a little differently about plants. Based on the pieces he had already written, we agreed he should write an article explaining how carnivorous plants came



to be what they are. Adams has not let us down; in the complex story that appears in this issue, he ambles through a short course on

evolution and ends up with a clear analysis of the mechanisms the different plants use to polish off their prey. His story is worth your attention.

The subject of evolution seems to appear in many places in this issue: Jane Borie writes of the three-year evolution of her new garden in Toms River after a lifetime of experience with other gardens in the Pine Barrens. Paul Meyer and Rick Lewandowski write about some of the witch-hazels that toughed it out through millions of years. Patricia Schriber's article, although not so focused on the Darwinian subtleties, presents a down to earth account of his "survival of the fittest" principle in her survey of trees, shrubs and flowers that survive the rigors of life in city lots.

more ...

PHS Members included in *American Women's Garden Book*

PHS librarian Mary Lou Wolfe says she had a hard time holding on to the first copy of *The American Woman's Garden** (by Rosemary Verey and Ellen Samuels, N.Y. Graphics Society, Little Brown & Co., Boston, 1984) that arrived on her desk. Initially, people picked it up because the garden on the cover was so beautiful. When they found out the woodland pond surrounded by primulas pictured there was Pamela Copeland's (Mt. Cuba in Greenville, Delaware), they checked out the text even more carefully. As the browsers found

more names and more stories about gardeners and gardens they knew in the book, the urgency to share their discoveries became greater.

Of the 30 essays in the book, written by women from all over the country, many are known to PHS members, either as friends or as gardens they have visited. In addition to Pamela Copeland's warm and passionate essay about her garden and her commitment to conserve wildflowers "before they become an endangered species," we were delight-

ed to see essays by Joanna Reed and Ann McPhail, both of whom have written several stories for *Green Scene* and been featured on its covers. Joanna has written about her wonderful country garden and Ann about her elegantly designed city garden.

While the book will undoubtedly look beautiful on any one's coffee table, it is much more than that. It is an extraordinary testament to the American garden scene which, as Rosemary Verey and Ellen Samuels say, need take second place to none.

*Available through the PHS Library and from the PHS sales counter - \$29.95 plus tax.




photos by Derek Fell

H. Thomas Hollowell, Jr. greets the reader from a corner of his maze.

THE MAZE AT DEERFIELD

Dignified English Boxwood and Vibrant Japanese Azaleas

 by Derek Fell

"There isn't a tool I haven't broken, nor one I haven't fixed," says H. Thomas Hollowell, Jr., chairman of the board of SPS Technologies, Inc. in Montgomery County. Of his 60 years' service with the company founded by his father, he claims "It was fun – I never had an unhappy day." And you can believe him. Boisterous and full of good humor, he enjoys his retirement to the fullest in a garden he designed and planted over a period of 35 years, a hobby that provided a diversion from his gruelling working days that offered little vacation time.

"Whenever I've had a job to do I've always wanted to do it right," he says, and the pride and joy of his garden – a boxwood maze – is a case in point. Very few horticultural mazes are made of English boxwood because it grows at the excruciatingly slow rate of little more than one inch a year. It takes 35 years for a six-inch seedling to grow four feet. Barberry, hemlock and holly hedges are far more popular choices for creating mazes, because they

grow faster. But they don't make the dense foliage cover that English boxwood makes, and the lines are never so clean and sharp.

Mr. and Mrs. Hollowell moved to their present home of Deerfield in 1947. A neglected farm in Rydal, Pennsylvania, it consisted of 35 acres, half of them wooded with magnificent stands of tulip poplars, oak and beech trees. The other half was mostly farmland overgrown with wild honeysuckle and poison ivy. A stream trickled through the property and had been dammed to create a lake, but by the time the Hollowells moved in it was choked with sediment and an eyesore.

An elderly farmhand and his family lived on the farm and with his assistance, Hollowell decided to cultivate a garden. He started off by purchasing 10,000 choice Japanese azalea cuttings (mostly Kurume and Kurume hybrids), which he randomly selected from a mail-order catalog, making sure he had a representative selection of colors and kinds, with different flowering times.

Shortly after the azaleas were established into temporary nursery beds, a bargain lot of 3,500 English boxwood plants was put on the market by a local nurseryman. Hollowell bought them all, recognizing a bargain when he saw one – although he was undecided about what he would do with the six-inch high plants. All he knew was that to create a beautiful garden he needed a lot of plants.

The azaleas grew phenomenally, and to stop overcrowding in the nursery Hollowell had to find them permanent places elsewhere on his property. So he converted the barren fields into luxuriant lawns and randomly created beds for them, some in island beds surrounded by lawn, others as undulating borders that followed lines of the natural woodland at the edges of the property. He made round beds, square beds, rectangular beds, oval beds, kidney-shaped beds, and into these he grouped the azalea plants using every conceivable color combination. The work reached fever pitch as he raced against

continued





Far away from the maze for a relaxed stroll at Deerfield.



Exbury azaleas and rhododendrons

time to move the plants from their crowded quarters. In the rush to get everything planted and to find a home for every seedling spontaneity of design materialized, creating a natural effect.

Then they started moving the boxwood seedlings from their temporary nursery quarters, creating hedges and avenues, sometimes in straight lines to divide the garden into sections, other times as gentle curves to follow the contour of a slope or a meandering path. But the boxwood nursery was still filled with plants when he saw

a plan view of the Hampton Court maze showing the complete design. Mr. and Mrs. Hallowell had visited Hampton Court a few years earlier and had managed to get lost in the maze even though it was in a sad state of neglect. They had also visited the replica of the Hampton Court maze at the Governor's Palace in Colonial Williamsburg. Slowly he realized what a magnificent maze he could create with his own English boxwood, and set to work on a half-size replica of the Hampton Court maze.

A scale plan of the Hampton Court maze

was first located, then a rendering of a half-size replica made on paper. String was used to delineate the outline of the maze onto the Hallowell lawn. Turf was cleared to create planting areas for the boxwood. The soil at Deerfield was previously cultivated fields and naturally acid. It has proven such a good site for the boxwood, no fertilizing and no watering has been necessary. The complete design contains 1,600 plants, spaced three feet apart.

The Deerfield maze is located at the end of a rectangular lawn leading off from the front of the house. It is flanked on three sides by azalea borders. In spring the bright green new growth of the boxwood and the regal formality of the maze design make a startling contrast to the riotous colors of the azaleas. Some of the azaleas are so closely planted their colors merge with each other, giving the appearance of a tricolored plant with red, white and purple blossoms. White and pink-flowering dogwoods, Japanese andromeda (pieris), native American rhododendrons and mountain laurel are strategically planted among the azaleas to intensify the flowering displays.

Today at Deerfield there are 45 acres of landscaped ground, including 22 acres of sprawling lawns containing more than 7,000 azaleas, 100 different kinds of trees and 5,000 feet of boxwood hedge. Although much of this is reminiscent of an English manor park, with massive beech trees and towering tulip poplars, reminders of the old farmstead are everywhere — a barn complete with corncrib and stable, and the stout stone farmhouse itself, dating back to 1804.

The highlight of Deerfield is its maze — kept neatly trimmed to a height of four feet because it seems aesthetically pleasing at just that height. Children can wander along its leafy corridors and enjoy the excitement of getting thoroughly lost, while adults can peer over its hedges and find the middle with little hesitation.

A maze is a most challenging horticultural endeavor. Demanding of space, plants need good soil to maintain dense, uniform growth, and constant pruning is needed to keep its outline sharp and well defined. The creation of a maze is not to be taken lightly, but as the Deerfield Maze can testify, its successful execution is a great tribute to good gardening and good humor.

Derek Fell is an award winning garden writer and plant photographer living in Bucks County, Pa. He is author of two gardening books and a book on photography.





This Philadelphia Green Sitting Garden, located in Point Breeze, South Philadelphia, is situated on a typical one-house lot. Orange celosia near the bench is interplanted with begonia; on the right climbing roses hug the wall. On the left winged euonymus is planted under a European hornbeam tree.

SURVIVAL OF THE FITTEST:

Plants for Tough City Gardens



by Patricia Schrieber

I recently visited a friend's garden at the Jersey shore, one filled with plants familiar to me. They were, in fact, some of the plants used successfully in Philadelphia Green Community Gardens: bayberry, Japanese black pine, winged euonymus, native juniper, Virginia creeper, trumpet creeper, black-eyed susans, and daylilies.

I've been interested in adapting seashore plantings to the somewhat distant, yet distinctly related, environment of vacant lot gardens. Although geographically miles apart, seashore gardens and Philadelphia gardens made on vacant house lots have more in common than meets the eye: extreme heat on exposed sites, soils with low fertility and poor water retention, plenty of sunlight and occasional exposure to salt spray and other pollutants. In ecological terms, plants that grow well under such conditions are hardy survivors.

The conditions found on any vacant lot are some of the toughest faced by city gardeners. A trash-strewn weed patch can actually be transformed into a successful garden, but not without planning. Starting with a look at the soil itself, picture the way a house becomes a vacant lot. A house wrecking crew goes to work, bashing down the house before filling in the basement with bricks and concrete left from the demolition. Once the basement has been filled, the crew dumps loads of soil on the site, bringing the surface up to sidewalk level. This layer of soil is generally of the poorest quality and is usually only about six inches thick not at all what a gardener has in mind for making a flourishing garden. At planting time, a supply of organic matter, a mixture of rotted wood chips and leaves, is trucked to the site and mixed in with the backfill, increasing the fertility and the water-retention qualities of the soil just a bit.

When selecting plants that will grow well on these vacant lot gardens, I look for the ones that will tolerate a range of soils from neutral to slightly alkaline. The mortar buried along with the brick is alkaline so I

Patricia Schrieber's interest in tough city plants grows out of her work as a landscape designer for the Philadelphia Green program. Her role in this PHS-sponsored program is to work with community groups to design the kind of gardens they want. Seventy-five city gardens later, Schrieber knows what has survived well. She's still looking, though, and would like to hear your success stories.

usually avoid acid-loving plants except for an occasional PJM rhododendron or Delaware Valley white azalea, but only in shady spots.

The reason for changing a vacant lot into a garden is to spruce up an eyesore in the neighborhood. Such gardens are usually ornamental and receive far less maintenance than their neighboring vegetable

Seashore gardens and Philadelphia gardens made on vacant house lots have more in common than meets the eye: extreme heat on exposed sites, soils with low fertility and poor water retention, plenty of sunlight and occasional exposure to salt spray and other pollutants.

gardens. Because people give these gardens less time, I select plants needing less frequent watering and pruning. Because the soil can't hold much moisture, the gardener needs a constant supply of water. The fire hydrant may be a block away from the site, or the one next to the garden may have a permanent cap on it, making it impossible to use, so I choose plants for their drought resistance.

Many of the gardens in the Philadelphia Green program are on one-house lots, usually about 15 ft. wide and 50 to 100 ft. long. Choosing slow growing and dwarf species

for these spaces increases the variety of plants you can use and reduces the need for frequent pruning. Plant size is also important when thinking about safety. A garden with high hedges around it is a garden most people learn to fear at night. Because neighborhood people want to see into the gardens, shrubs growing no higher than three feet are planted closest to the fence.

My quest for survivor plants began in gardens at the shore, and moved later to inland gardens, both city and suburban. I always ask gardeners that I visit how well particular plants tolerate extremes in growing conditions. Then, before each planting season, I select a limited number of the newly recommended plants along with the tried and true city survivors.

Over the years, I've gone back to the established gardens to see how the different plants have fared. Although many of the gardens receive only an occasional watering and weeding, pruning and mulching, and in spite of the trying conditions, many of the plants do quite well. These are the tough plants, street-wise and tolerant of extremes in growing conditions. There is not a hothouse flower in the bunch, mainly because any plant the least bit particular has a hard time surviving.

The first Philadelphia Green Sitting Garden, "Webster Place," was planted in the summer of 1978 (*Green Scene*, May/June 1979). Two upright junipers trained into an arch over the garden gate still flourish after all these years. A 'Betty Prior' rose is also planted in that garden. I have returned to that rosebush every year since. Although it has endured several summers of severe drought and been pruned back very hard every couple of years, 'Betty Prior' blooms consistently all summer long, with almost no disease or insect problems.

In one sorely neglected garden, a 'Betty Prior' rose survived alongside a rather stalwart bayberry and two hardy mugo pines. Exposed to two dry summers, the pines thrived in their partially shaded raised

continued

planting bed. Late one summer, both the bayberry and the rose were mistakenly cut down along with some tall weeds, only to come back from the base, twice as full the next summer.

Over the years I have used more and more herbaceous perennials, concentrating on those species that grow up to 18 to 24 inches tall (see list for examples). This avoids time-consuming staking. I choose only those taller species with sturdy stems. Plantings of groundcover like ajuga, snow-in-summer, wooly lambs ears, thyme, and sedums help fill in the spaces between the woody plants, reducing the need for weeding. Annuals that reseed themselves, like sweet alyssum, four o'clocks, dwarf snapdragons, portulaca and marigolds are a welcome addition, providing a money-saving, reliable source for new plants every year.

When I first started on the trail of hardy survivors I tried two seemingly sure bets, the beach plum and 'Blue Pacific' shore juniper, both often found in seashore areas.

Late one summer, both the bayberry and the rose were mistakenly cut down along with some tall weeds, only to come back from the base, twice as full the next summer.

The results were unsatisfactory, and after losses over several seasons, I have not used them again. Of course, I am not claiming that these plants cannot be grown in the city, just that they may have to be grown under slightly different conditions. I am always on the lookout for the most durable plants for these garden sites: ones that can stand up to excessive heat, poor soils with

low water-retention, and a myriad of challenges that are part of city living. Picking plants for these sites is something of a gamble, based more on trial and error than scientific data. But such a gamble is worth the risk when new survivors are discovered thriving in our city environment.

Books

For specific information on size, planting instructions and maintenance, please refer to:
Dirr, Michael. *Manual of Woody Landscape Plants*, Stipes, Champaign, Ill. 1983
Sill, Steven. *Herbaceous Ornamental Plants*, Stipes, Champaign, Ill. 1980
Wyman, Donald. *Trees for American Gardens and Shrubs and Vines for American Gardens*, Macmillan Co., N.Y. 1951

SURVIVAL OF THE FITTEST – TOUGH PLANTS FOR CITY GARDENS

Trees

Crataegus oxycantha 'Superba' †
crimson cloud hawthorn
Gleditsia triacanthos inermis 'Shademaster' †
honey locust
Hibiscus syriacus †/§
rose of sharon
Juniperus chinensis columnaris †
blue columnar juniper
Malus 'Snowdrift' †
snowdrift crabapple
Pyrus calleryana 'Bradford' †
Bradford callery pear
Sophora japonica 'Regent' †
Japanese pagoda tree or
Chinese scholar tree

Shrubs

Chaenomeles speciosa †/§
flowering quince
Cytisus scoparius †
scotch broom
Deutzia gracilis †/§
slender deutzia
Euonymus alata compactus †/§
winged euonymus
Juniperus chinensis 'San Jose' †
San Jose juniper
Juniperus procumbens 'Nana' †
dwarf Japanese garden juniper
Lagerstroemia indica †
crepe myrtle

Myrica pensylvanica †/§
bayberry
Pinus mugo mugo †/§
mugo pine
Potentilla fruticosa †/§
bush cinquefoil
Rhododendron 'Delaware Valley White' §
Delaware Valley white azalea
Rhododendron 'PJM' §
PJM rhododendron
Rosa 'Betty Prior' †
Betty Prior rose
Spiraea nipponica 'Snowmound' †
snowmound spiraea
Syringa meyeri †
dwarf lilac
Taxus baccata 'Repandens' †/§
dwarf English spreading yew
Taxus cuspidata 'Nana' †/§
dwarf Japanese yew
Viburnum x juddii †/§
fragrant viburnum

Perennials

Ajuga reptans †/§
carpet bugle
Cerastium tomentosum †
snow-in-summer
Coreopsis lanceolata †
coreopsis
Gaillardia x grandiflora †
gaillardia

Hemerocallis species †/§
daylily
Heuchera sanguinea †/§
coral bells
Iris siberica †
Siberian iris
Lilium 'Connecticut Lemon Glo' †
lemon glo lily
Liriope muscari †/§
lilyturf
Narcissus species †
daffodil
Rudbeckia hirta †
black-eyed susan
Sedum spectabile †
never die
Tulipa praestans fusilier †
praestans fusilier tulip
Yucca filamentosa †
yucca

Climbers

Campsis radicans †/§
trumpet creeper
Clematis x jackmanni †/§
Jackmann clematis
Parthenocissus quinquefolia †/§
Virginia creeper
Parthenocissus tricuspidata 'Lowii' †/§
Boston ivy or Japanese ivy
Rosa 'Golden Showers' †
golden showers rose

† sunny § shade



A 'Betty Prior' rose, the six-year-old matriarch of "Webster Place," the first Philadelphia Green Sitting Garden.

Successful evergreen companions growing in another sitting garden, *Taxus baccata repandens* (dwarf spreading English yew) and *Juniperus chinensis* 'San Jose' (San Jose juniper), interplanted with colorful annuals. ▼




Exotica in the Italian Market

To first-time visitors, the large colorful sprays of *Cymbidium* are unexpected decorations on the counters of D'Angelo Brothers, a specialty butcher shop on South 9th Street in Philadelphia's Italian Market.

The walls boast antlers, animal horns, cured hides and pheasant feathers, an indication of the variety of products available there: game both feathered and furred, pâtés and sausages, made on the premises, quail and goose eggs, and various rolled roasts stuffed with mixtures of spices, fruits and spirits.

Santo William D'Angelo, Sonny to everyone, is the third generation proprietor of the 80-year-old family business. He is the one who brings orchid plants from October through June from his home; he has propagated enough plants to start a second business. In fact he can occasionally be persuaded to sell an orchid along with a

 by **Charlotte L. Archer**

pheasant ballotine. Sonny is also the creative cook who makes the ballotines, pâtés and sausages for local and out-of-town customers.

Sonny's interest in exotic plants and foods dates from his marriage to Lorraine LaRosa 12 years ago. He comes from a family of good cooks — fantastic, he says — but only after discovering wonderful French, Italian and Portuguese food on a wedding trip to Europe did he decide to immerse himself in cooking. During that same year Lorraine took him to the Philadelphia Flower Show where he saw George

Off's Waldor Orchids exhibit of a tropical forest of orchids at the entrance to the Show. Sonny was enthralled and he went to Waldor Orchids in Linwood, NJ to immerse himself in orchid culture.

He purchased a *Miltonia* (failure), a *Phalaenopsis* ("it pulled through") and two *Cattleya* (big success). He was instructed in orchid culture by George Off (later sons Walter and Jim Off became Sonny's gurus), read orchid books, bought more plants and soon had to turn one room of the D'Angelo's two bedroom apartment into a plant room. Later 70 plants moved with them to a suburban home with a sun room facing south, east and west in which 350 orchids grow on graduated wooden slats.

There is no heat in the sun-room, but good insulation and an open door to the living room prevent the temperature from falling below 55°F at night in the winter. Between the outside wall and inside ply-

continued



The foliage of *Cymbidium* Chatwood 'Ermine' droops over a dinosaur bone.

Sonny D'Angelo holds a pot of *Cymbidium* Chatwood 'Ermine.' The dark flower matching the pheasant's plumage is C. Lillian Stewart 'Powder Puff.' ►



Exotica in the Italian Market



Flower arrangement. The tall spike is *Cymbidium* 'Rosy Greer.' Anthurium, yellow freesias and ti leaves fill in around the orchid.

14

wood paneling below the windowsills is 3½ in. of puffy fiberglass insulation. In winter the French windows are faced with storm sash outside and a layer of plastic inside. A ceiling fan circulates the air, which can heat up to 85°F on a bright winter day.

The temperature range in the sun-room is more favorable to the cymbidium than to the other orchids. The *Cattleya* and *Odon-toglossom* require higher night temperatures so Sonny now has only a few of those, which he keeps near the living room door. The plants are misted daily; Sonny waters "when the pots feel too light."

In summer the sun-room becomes a playroom for two young D'Angelos, and the orchids are placed under a grape arbor, the slatted deck of a pool and an oak tree where they stay until the first heavy frost

warning. They are fed with Peter's 18-18-18 every two weeks (summer only) and are misted using a Hudson pressure sprayer at least once a day. Lorraine, fortunately, is enthusiastic about orchids.

Sonny grows for size rather than for divisions. He is patient, often starting from seeds from his plants that Walt Off sets in sterile agar flasks for him. The flasks rest on an east windowsill until seedlings are ready for the real world of bark, sand and perlite. By 1980 Sonny had many plants providing bloom; it was then that he began sharing his bounty with customers. The plants thrive in the shop: meat markets are not heated in winter and are air-conditioned in summer so the temperature is usually about 65°F.

Sonny's favorite plant is *Cymbidium* 'Lil-

lian Stewart,' which has bloomed on December 22 for the past three years. It travels to the shop in a large trash bag in a heated car and blooms through March.

As we go to press, the D'Angelos have moved to a house with a large yard in South Philadelphia. Sonny is growing cymbidiums under high intensity sodium lights in the basement until a greenhouse is built. Then he can increase the genera of orchids he grows. A computer is going to do the record keeping. Stay tuned.

•

Charlotte L. Archer is former membership coordinator at PHS. She says she is a compulsive marketer, fortunately she loves to cook.

CARNIVOROUS PLANTS:

What Are They? What Do They Want?

 by Richard M. Adams, II

First there was the Bionic Man. Then the Bionic Woman. And finally the Bionic Dog. The next thing is sure to be a Bionic Houseplant.

Let us pray it is not a carnivorous plant. "Actually eats sides of beef right out of your freezer, digests its prey in a few seconds, and brushes after every meal," the color placard might read over a display of plastic pots in the supermarket.

nutrition

Actually, it would be difficult to make a bionic carnivorous plant, since carnivorous plants are basically the same as other plants: They make food through photosynthesis, by combining carbon dioxide with water to produce carbohydrate. The prey they capture is really not a source of food (protein, carbohydrate and fat), which the plants make themselves; the prey is a source of the fertilizer elements nitrogen, phosphorus and potassium.

How do the insects a carnivorous plant captures become "fertilizer"? In a chemical fertilizer, nitrogen (chemical symbol, N) may be found as the ions ammonium (NH_4^+) or nitrate (NO_3^-) and come from salts such as ammonium sulphate $[(\text{NH}_4)_2\text{SO}_4]$ or potassium nitrate (KNO_3). These ions can also be derived from animal and plant tissue. Nitrogen is part of the amino acid molecules which, when linked end-to-end, form protein chains — the structural components of both plant and animal bodies.

When an organism dies, its body decomposes. Proteins decay into amino acids, which in turn are broken down into their component elements. Bacteria can remove the nitrogen from amino acids, transforming it into nitrate. This process is part of the food chain encompassing all living things. Plants provide nourishment for herbivores (plant-eating animals, e.g., mice), herbivores may become food for meat-eating animals (e.g., owls), and all fall prey to microorganisms (bacteria and fungi) when they die and their bodies are broken down into component elements. Plants derive nutrients from these elements, completing the cycle.

We think of fertilizer as a soil-borne commodity absorbed through a plant's roots, but studies of foliar fertilization have shown that plants can absorb nutrients through their leaves as well. It enters not through the leaf pores or stomates but through microscopic channels, called *plasmades-*



Sarracenia leucophylla

mata, made up of living matter extending through the cell walls of the leaf surface, visible only with a high-powered light microscope or an electron microscope.

If an insect were to die while upon a leaf, ever-present bacteria would decay its body into simpler compounds. Its proteins, as we have seen, would disintegrate into amino acids and then into nitrogenous ions. Nitrogen, in this form, could be absorbed by the plant leaf and nourish the

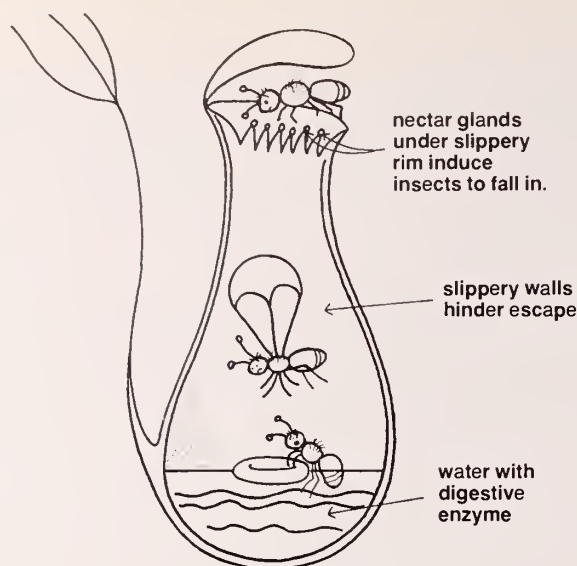
plant like fertilizer.

What would happen if plants "woke up" to this idea — that if they could induce insects to fall onto their leaves and perish there, this would give them some of the minerals they require?

The idea isn't too farfetched. Since carnivorous plants absorb their prey, broken down into the same elements as fertilizer, through their leaves, the process is really just a form of foliar fertilization. The car-

continued

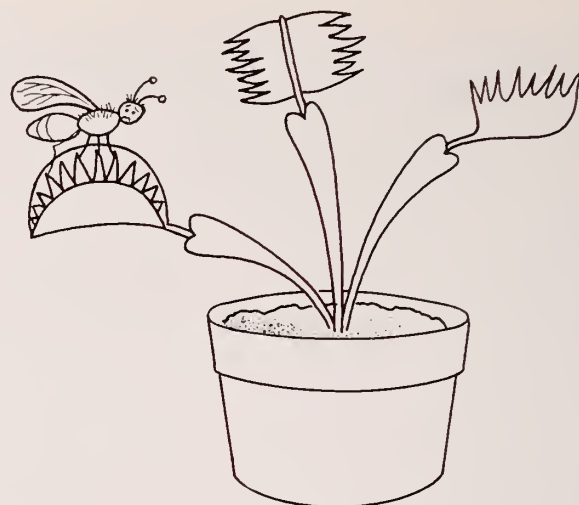
illustrated by R. Scott Bennett



PITFALL TRAPS

e.g. *Nepenthes* - Asian Pitcher Plant

Insects are induced to fall into escape-resistant pitchers, where they are digested and absorbed.



STEEL TRAP

e.g. *Dionaea muscipula* - Venus Fly Trap

Venus fly trap leaves are like miniature steel traps or bear traps that snap shut to trap insects.

nivorous plants, in effect, have shortcut the food chain. They are "self-foliar-fertilizing."

evolution

How did certain plants "think of" capturing insects as a source of essential fertilizer elements? The observations of Charles Darwin help explain how this adaptation evolved.

In 1831, the 22-year-old Darwin set sail on the five-year voyage of the HMS *Beagle* as ship's naturalist. The expedition spent some five weeks at the Galapagos, a bleak group of volcanic islands off South America's western coast. Here Darwin observed that while the animals on different islands bore some resemblance to each other and to those of mainland South America, each major island had its own distinctive species.

This did not seem to fit the prevailing idea. At that time, people thought all living things were the product of a single act of creation. If this were true, then why weren't the plants and animals of neighboring islands all alike? Why did they resemble those of the South American mainland rather than being unique? Could it be that they had spread from the mainland, and then among the islands, changing gradually to suit local conditions? Darwin had seen evidence of *evolution*, a gradual change in species through time.

Upon return to England, Darwin happened to read a book by the Rev. Thomas Malthus which, in 1798, forewarned of an impending population explosion. Not only would our food supply run out, warned Malthus, but there would soon be something like "standing-room only" on earth

Malthus saw war, famine, and disease as the principal checks on population growth.

Darwin saw this could be true not only for humans, but also for animals and plants. He calculated that if all the progeny of a single pair of elephants (the slowest-breeding animals) grew to maturity and bred, there would be 19 million elephants in only 750 years. But the number of elephants actually remains constant under normal conditions: where there were two individuals 750 years ago, you would generally find two today. So, what determines which two elephants out of the possible 19 million will survive?

Darwin coined the term "natural selection" for the process that determines which two progeny remain. He reasoned that those best adapted to their environment survived, so natural selection became known as "survival of the fittest."

Natural selection, then, is one process influencing the way species change or evolve. If individuals could not somehow become significantly different from one

another, though, one could hardly be fitter than another. Another process must come into play: *mutation*, random changes in the genetic material, in life's blueprint, that are passed on from generation to generation. Mutations can make organisms more fit, or more likely, less fit. Through natural selection, those organisms best adapted overall are the ones that survive. These two forces, mutation and natural selection, allow species to change. This is how they evolve.

the "idea" of becoming carnivorous

What steps would be necessary for a plant group to evolve a carnivorous habit? One requirement would be an environment favoring the survival of plants with mutations toward carnivorism. Most carnivorous plants, indeed, grow in swampy areas or bogs with nutrient-poor soils, a significant force or *selection pressure* that would favor the development of the carnivorous habit.

Another requirement would be mutations causing structural changes necessary to catch insects and other prey. In many cases, existing plant features like attractive coloration, leaf hairs, and secretory glands have evolved to help lure, capture, and digest insects.

The many ways plants have evolved to become carnivorous are interesting to consider.

funnel-shaped, folded and joined at the edges. The pitcher plants can catch insects without moving thanks to some

kinds of carnivorous plants

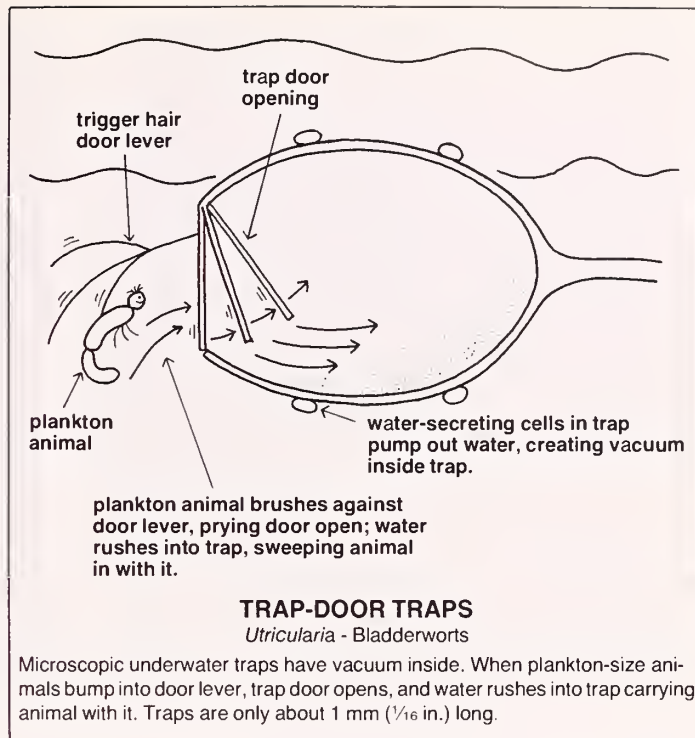
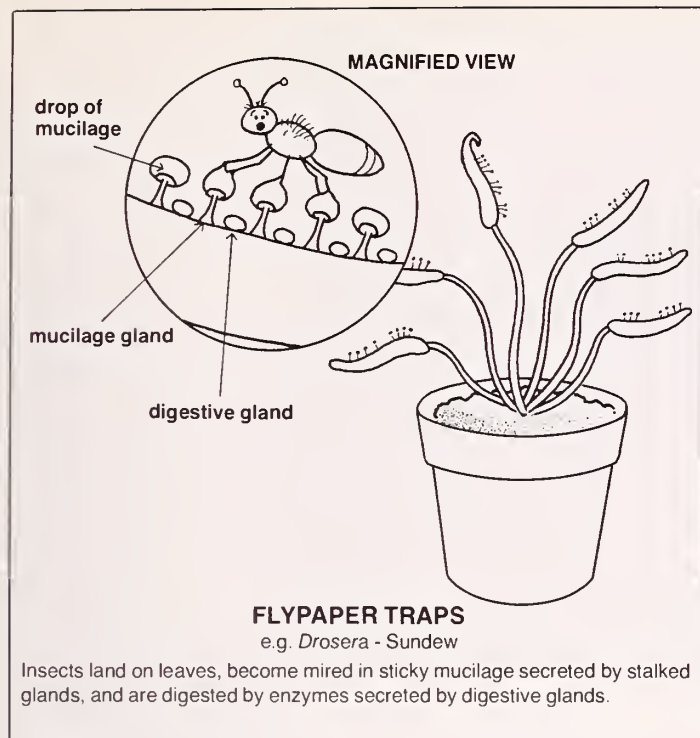
The Pitcher Plants

The simplest traps are leaves that are



Nepenthes macfarlanei seedling

photo by Richard Adams, II



seemingly clever adaptations.

The eastern North American pitcher plants (*Sarracenia*, including the locally native *S. purpurea*) have open-topped pitchers with gaudy red coloration. Glistening nectar secreted at the rim of the pitcher helps lure prey.

When insects land on or crawl up the pitchers, they find themselves in a figurative thicket of downward-pointing hairs. These make it easy to move down toward the pitcher but difficult to regress. Further down inside the pitcher, the hairs shorten until they become thick, overlapping scales, presumably offering poor footing. The scales end abruptly and the pitcher wall becomes silky smooth, a sure induce-

ment to slippage.

An insect that falls to the bottom of the pitcher finds itself in a pool of water. The plant secretes a wetting agent to help drown the insects, and short, stiff hairs hinder escape.

The cobra plant or California pitcher plant (*Darlingtonia californica*), with its translucent hood and tongue-like appendage, looks like a snake ready to strike. Its insides are similar to the eastern pitcher plants, *Sarracenia*; it, too, is in the botanical family Sarraceniaceae.

The pitcher opening is underneath the hood and faces downward. Projecting down in front of the opening is a fishtail-shaped appendage. This tongue, which secretes nectar, attracts insects that land on it. Microscopic, upward-pointing hairs line the tongue, providing sure footing for insects to climb up the tongue and into the opening. Once inside the hood, insects may be fooled by the translucent patches and fly upward, only to tumble down inside the pitcher. The lining of downward-pointing hairs, as we have seen, makes it easy to go down but hard to go back out.

High on the misty, desolate plateaus of the Guayana highlands are found the South American sun pitchers (*Heliamphora*), the third member of the family Sarraceniaceae. Their bright green pitchers emerge from clumps of sphagnum moss. A reddened hood atop the pitcher rim secretes nectar and attracts prey, while a lining of downward-pointing hairs inside the pitcher induces insects to fall down inside.

Insects captured by these three genera of pitcher plants are thought to be digested solely by bacterial action. None of the

digestive enzymes found in other pitcher plants have been proven to exist in the family Sarraceniaceae.

Digestive enzymes are secreted by the Asian pitcher plants (*Nepenthes*). The pitchers are suspended from ordinary-looking leaves by spindly tendrils, and one wonders how they can balance and remain upright. The pitcher is usually green splotched with ruby-red flecks. Its opening is embellished with a glassy rim that curls inward and is studded with nectar glands on its inner edge. In trying to get at this cherished exudate, insects often slide into the pitcher. Its sides are slippery, too, for they exude a flaky wax that comes off on insects' feet. Even suctioncup or claw-footed creatures can't hold on.

Glands in the lower part of the pitcher secrete digestive enzymes that break down prey quite efficiently, unless disrupted chemically. Patrick Nutt, collections foreman and developer of Longwood Gardens' fine *Nepenthes* collection, tells of thoughtless visitors who tossed pennies and orange peels to the plants. The resultant copper poisoning and acid imbalance gave them "indigestion," diagnosed by the foul odor or not-so-efficiently digested prey.

A prized specimen for indoor growing, the miniature Australian pitcher plant, *Cephalotus follicularis*, looks at first glance like a little *Nepenthes*, but the two genera are not related. *Cephalotus*, with its one species, is placed in its own family, the Cephalotaceae.

The pitchers, an inch or so high, are intricately structured. Three girderlike ridges fringed with stiff hairs ascend the outside,

continued



Cephalotus follicularis



Drosera capensis 'Narrow Leaf'



Pinguicula moranensis

like ladders. They rest on the ground, and ants (the predominant prey) have been observed climbing up the ridges.

The pitcher rim is pleated into ridges that extend as curved "fangs" into the pitcher opening, so it looks like a necklace of animal teeth. *Cephalotus* is a passive trap, though, and these teeth do not move; they just look menacing. They may in fact be "sweet teeth" because they are lined with nectar glands, which probably induce insects to crawl along the teeth and eventually fall into the pitcher, something like "walking the plank."

Below the opening, the pitcher interior is shaped into a funnel-like collar lined with fine downward-pointing hairs; so fine, in fact, that to the unaided eye they look like a powdery coating, like the wax on an apple. They undoubtedly offer poor footing, ensuring that captured prey will continue toward the bottom of the pitcher, where the digesting fluid is found.

The Venus Fly Trap

If there were ever a bionic carnivorous plant, it would probably be a Venus fly trap. Its leaf lobes slam shut, their fringes of hairs interlocking like a medieval torture contraption.

Fly trap leaves are formed of two lobes attached at the midrib, like a hinge, but the hinge does not move during closure. Closure is caused instead by the contraction of the upper layer of leaf cells, brought about by the loss of water from cells. There are certain advantages to this kind of hinge: there is probably more force in the contraction of a mass of cells, each one pulling the others just a little, their combined force multiplying into a mass effort.

Ben Franklin probably would have admired the upper leaf cells of the Venus fly trap for their "united we stand" effort.

He might also have been intrigued by their electrical properties, for it is electrical impulses that stimulate closure of the Venus fly trap. There are three trigger hairs poised in a triangular pattern on each leaf lobe. They are stiff but can be flexed at their bases, the site of electrical-impulse generation. When any two trigger hairs are bent (or the same one twice), the electrical impulses travel (by yet-undiscovered pathways) to the upper cell layer, which is induced (by a stimulus also unknown) to contract by water-loss.

A captured insect that continues to struggle inside the trap will further stimulate the trigger hairs, and this causes the leaf lobes to close even tighter in preparation for digestion. (If, however, the prey escapes, or the trap has been artificially triggered, the trap will reopen in the absence of additional stimuli.) Nitrogen-containing substances and salt released from the prey continue to provide the stimulation necessary to keeping the trap shut. When the prey has been completely digested, chemical stimulation ceases, and the trap reopens. The Venus fly trap seems to work quite well already, even without bionics.

The Sundews

These same capture mechanisms are found in the related sundews (*Drosera*) which are, instead, a kind of flypaper trap. The leaves — which are spoonshaped to paddleshaped, depending upon the species — instead of closing around the victim from the side, tend to fold inward

from the end to envelop the prey. Speeded up with time-lapse photography, the movement of spoonshaped leaves (as in the native *Drosera rotundifolia* and *D. intermedia*) would remind you of a clasp hand. Longer leaves, like those of the South African *D. capensis*, recoil like a New Year's Eve tweeter.

This leaf movement is from cells contracting on the upper surface of the leaf, as they do in the Venus fly trap. It is stimulated when the leaf perceives protein on its surface or the movement of prey. Struggling insects typically bend the tentacles of the leaf surface, and these, like the trigger hairs of the Venus fly trap, generate electrical stimuli that somehow travel to the cells of the leaf surface and cause them to contract. As Darwin noted, the similarities indicate the close relationship between the sundews and the Venus fly trap, even though one has a steel trap and the other a mechanism like flypaper for capturing prey.

The Butterworts

Delicate, African-violetlike flowers stand above the opalescent, velvety green leaves of butterworts (*Pinguicula*), another of the flypaper carnivores. Worldwide in distribution with some native species, the showiest, easiest-to-grow are the Mexican orchid-flowered butterworts such as *Pinguicula moranensis*.

Stalked glands, barely visible, cover the leaves, secreting fine mucilaginous drops that refract light and make the leaves feel sticky. Gnats and other small insects adhere to the leaves and are broken down by digestive enzymes secreted by glands on the leaf surface.

Bladderworts

In swamps and bogs, tiny yellow or purple flowers standing above the water surface are a sign of aquatic bladderworts, *Utricularia*. Their leafless underwater branches support pinhead-sized, hollow bladders that implode to capture copepods and other plankton-sized animals. Some tropical utricularias are epiphytic or terrestrial, with leaves and colorful flowers; some are carried by carnivorous plant nurseries and grown by connoisseurs.

whose idea was carnivorism?

All carnivorous plants lure, capture, and digest prey. Does this mean that all are related, that the "idea" of becoming carnivorous came to light only once? Early taxonomists, unaware of evolution, believed the carnivorous plants represented a unique idea in the mind of the creator, and grouped most of them in the same botanical order, the Sarraceniales.

Today we recognize that flower structure evolves more slowly than vegetative organs (flowers are more important to the plant's reproduction and are around less of the time) and provide a better cue to relationships. Thus, carnivorous plants appear to have evolved from several different lines. Someone personifying these plants might say that the "idea" of becoming carnivorous had been "thought of" several

times. Scientifically, this is called "parallel evolution."

why not more carnivores?

If carnivorous plants have been successful at short-cutting the food chain and getting fertilizer elements directly from captured prey, why haven't more plant species become carnivorous?

Exploiting this resource requires an investment; there is a cost attached to the benefit. In some cases, leaves must be tubular to catch insects rather than fanning out to catch more light; special enzymes must often be synthesized to help digest prey; and motion may be vital in capturing food. Only when soil nutrients are the limiting factor to growth — and where the air, water, and sunlight vital to photosynthesis are plentiful — are these special adaptations worth the cost of the energy it takes to form and maintain them. When soil-borne elements are plentiful, it isn't worth the effort to become carnivorous.

I know there is no scientific evidence of plants having "secret lives" or other conscious attributes. Still, everytime I see a pitcher plant with its assemblage of gaping leaves, it reminds me of a nest of hatchling birds, all waiting to be fed. Isn't it amazing to think that these plants, with their seemingly clever adaptations, evolved without

conscious intervention, with no bionics involved? That is the fascination of carnivorous plants.

References

- Carnivorous Plants* by Gordon Cheers. Carnivorous and Insectivorous Plants, P.O. Box 78, Diamond Creek, Victoria 3089, Australia. (1983) \$7.95
Carnivorous Plants by Adrian Slack. The MIT Press, Cambridge, MA. (1980)
The Carnivorous Plants by Francis E. Lloyd. Reprinted by Dover Publications, New York. (1976; originally published in 1942)
 (See also list in *Green Scene*, "A Glistening Carnivorous Jewel," Patricia A. Knauff, September 1984, page 18.)

Sources

- Peter Pauls Nurseries
 Canandaigua, NY 14424
 (Catalog free)
 Plant Shop's Botanical Garden
 18007 Topham Street
 Reseda, CA 91335
 (Catalog \$1.00, refundable with order)
 World Insectivorous Plants
 2130 Meadowind Lane
 Marietta, GA 30062
 (Catalog 50¢)
 (See also list in *Green Scene*, September 1984, page 18.)

Richard M. Adams, II, holds a Ph.D. in botany from the L. H. Bailey Hortorium, Cornell University, and has been growing and studying carnivorous plants for over 15 years.

CARNIVOROUS PLANT TYPES

Trap Type	Common Name	Scientific Name	Family Name	Distribution	Comments
'steel trap'	Venus fly trap	<i>Dionaea muscipula</i>	Droseraceae	Carolinas	Commonly sold but difficult to grow, due to temperate origin.
'trap door'	bladderworts	<i>Utricularia</i> (many species)	Lentibulariaceae	worldwide	Tropical, epiphytic species easy to grow; traps visible in see-through containers. Natives visible in bogs, swamps.
'fly paper'	butterworts	<i>Pinguicula</i> (about 30 species)	Lentibulariaceae	worldwide	Mexican, orchid-flowered species easy to grow indoors.
	sundews	<i>Drosera</i> (about 100 species)	Droseraceae	worldwide	Many tropical species easy to grow; some natives visible in local bogs, pine barrens.
	rainbow plant	<i>Byblis</i> (2 species)	Byblidaceae	Australia	Straggly curiosity, easy to grow but short-lived.
'pitfall'	Australian pitcher plant	<i>Cephalotus follicularis</i>	Cephalotaceae	Australia	Easiest-to-grow pitcher plant indoors.
	Asian pitcher plants	<i>Nepenthes</i> (about 70 species)	Nepenthaceae	S.E. Asia	Need warmth, high humidity to produce pitchers. Good collection at Longwood.
	California pitcher plant	<i>Darlingtonia californica</i>	Sarraceniaceae	California, Oregon	Commonly sold but difficult to grow, due to temperate origin.
	North American pitcher plants	<i>Sarracenia</i> (about 12 species)	Sarraceniaceae	E. U.S.A.	<i>S. purpurea</i> subsp. <i>venosa</i> easy to grow; tall species difficult indoors.
	South American sun pitchers	<i>Heliamphora</i> (about 6 species)	Sarraceniaceae	N.E. S. America	Rare in trade, hard to propagate, but easy to grow under lights.

Coenosium Gardens:

A Conifer Collection that Started on a City Lot

 by Peter Loewer

In 1974, Bob Fincham started his collection of conifers on a city lot in the middle of Lehigh, an industrial borough along the Lehigh River. With a pleasantly landscaped cemetery lawn to the north, and neighborhood houses and lawns at the other three corners of his lot, Fincham has been able to find a place for his extensive collection of plants, a small but formal Japanese garden, a long, dry river bed filled with stones in the Japanese manner, a greenhouse and lathhouse, plus his home.

"Since I started collecting plants in 1974," he said, "teaching high school science has given me enough free time to look after the gardens. And thanks to several good and generous friends' contributions, I think I have one of the most comprehensive collections of conifers on the east coast."

Looking around Fincham's garden one quickly realizes the appeal of conifers in the landscape: endless variations of greens, dotted here and there by cultivars developed for yellows, golds, oranges, browns, and variegated needles striped with white, all on plants: short, round, wide, thin, squat, or towering towards the sky.

While talking he bends to straighten some pine bark mulch around a specimen of Norway spruce (*Picea abies* 'Humilis') that is close to 30 years old and only a foot in diameter.

"I guess one of my biggest goals," he continues talking, "is to make some of these rare and choice plants available to anyone who wants to garden with conifers. So I started as a selling nursery in 1980 and called it Coenosium Gardens, after the Greek word for plant community. My catalog now lists some 650 cultivars and everything there can be propagated to order. I have a few crop failures now and then but I hope that will remain the exception not the rule."

Under a bright September sun we walk along the neat paths through his organized forest on just over one and a half acres of land. Fincham stops before a sweet gum tree that is ablaze with color: reds and pinks inspired by the coming autumn fight with the greens and yellows of this cultivar's special variegation.

"This sweet gum is one of my favorites," he said. "This variegated form is called

Liquidambar styraciflua variegata. The trees produce an aromatic balsam called storax that is important in medicine and the perfume industry but in the garden it's a great ornamental shade tree. I have a number of plants that are not conifers. Wait till you see my collection of Japanese maples."

Now we stop to gaze at a circle of rounded hills that surround the town, all just lightly tinged with the coming colors of fall, then walk over to his greenhouse and the lath house where the rooted plants are kept from the heat of the sun.

The sweet gum produces an aromatic balsam called storax that is important in medicine and the perfume industry but in the garden it's a great ornamental shade tree.

grafting to fill orders

"I usually graft plants to fill orders that are placed by December 1 of each year," he said. "The firs (*Abies*) are all grafted on to concolor fir root stocks that are hardy in Zone IV (-30° to -20°F.); the other conifer genres follow the same procedure using compatible but hardier root stocks for each graft. A hardy root is used to aid the survival of the weaker twig or scion in the graft, giving it the benefit of a strong root system. Plants take about seven months to root, and I hold on to them in the nursery for another eleven months before shipping."

When asked for special advice on how to deal with a freshly grafted plant in the garden, he said: "You've got to prepare a special bed to grow the young plants for two or three years. Ideally, it should be double-dug, with a heavy layer of sphagnum peat moss, compost, and aged cow manure incorporated in the dig. Surround it with a two-foot-high fence to keep out the rabbits," — rabbits was emphasized with a snarl — "and use snow fence or a similar slatting or lattice (from a nursery center) to provide shade for the first year, running the lath in a north-south direction. Remember to water thoroughly about once a week during dry spells. After two or three years, the plants will be large enough to transplant easily in the spring or in most of Pennsylvania, in the fall."

developing unique cultivars

I asked Fincham where some of these

unique cultivars came from in the first place.

"Witches'-brooms," he answered. "Those are a dense and abnormal growth that arises from mutated buds on coniferous trees. They usually retain these characteristics — forms that are either dwarf, semi-dwarf, variegated, weeping, you name it, the varieties are endless — when propagated vegetatively. These conditions are sometimes caused by disease, including viruses, insects, fungi, etc., but they will not reproduce at all, either sexually or vegetatively."

That afternoon I left with a promise to return the following spring.

On the last day of this past May, I again went to Coenosium Gardens. Earlier that week the northeast had endured more rain, storms and floods than had been seen for decades, but under a clearing sky, Fincham's collection looked better than ever. We once again made the rounds as though the last seven months had never been.

He stopped at his then developing Japanese dry river bed and pointed to a huge gully at the edge of the stones.

"That's the result of the heavy rains of last week," he said, "but there are compensations: this year's growth on the conifers will be fantastic."

I saw a fine example of the eastern arbovitae, this particular form colored a beautiful gold.

"It's called *Thuja occidentalis* 'Sudsworthii' and turns somewhat orange in the winter," he said, once again as always rattling off the scientific name without a moment's hesitation, a feat that he can perform in front of every one of the more than 800 plants in the collection.

"You'll like this, I think. It's my group of Canadian hemlock sports."

He bent down to gesture at what looked like a green soccer ball densely covered with needles. "This is *Tsuga canadensis* 'Minuta.' It takes some 20 years to get this big. It'll never be one of those plants that overtake a garden."

"These plants all have a special value in today's garden. Years ago it was easier — and cheaper — to plant large areas, space wasn't at such a premium. But in today's smaller backyard, dwarf conifers have a very specific function: You can pack doz-



Thuja occidentalis 'Sudsworthii'



Thuja canadensis 'Minuta'

ens of plants in an area that was once devoted to one."

transplanting conifers

I asked him for advice on transplanting conifers.

"The best time," he answered, "is in the early spring when the plants are still dormant, as soon as the ground thaws. Then in the early fall. Either time is good but where winters are not too harsh, fall is preferred. After all you get an extra amount of settling in. Here in Lehighton I've had great success except for hemlocks and birches, they seem to prefer spring.

"When a plant is first set in its newly dug hole, and always make sure the hole is large enough, don't skimp, half fill the hole with soil, loosen the burlap on your balled and burlaped tree, and push it into the hole. Fill it with water. Wait until the water soaks through then fill the hole with soil and tamp down the soil, hard. Water once or twice a week — depending on rainfall — soaking well each time. You don't have to remove the burlap, it will rot as long as it's cotton, not plastic."

We paused to examine a Cole's prostrate hemlock (*T. canadensis* 'Cole'). This particular cultivar will climb over a wall, or down a slope and actually hug the ground as though it's about to be pulled away. Fincham points out that hemlocks seem to produce more sports than most other conifers and gestures to the more than 50 different types in this grouping.

I spied a weeping Douglas fir (*Pseudotsuga menziesii* 'Glauc Pendula') hanging over a small bank, its new growth a lush and lively green and thinking how fine it would look in my own garden asked Fincham how you transplant a tree that is already well-settled in the landscape.

"The fall before moving the tree," he answered, "root prune by estimating the size of the ball of earth you will need in transplanting, then push a nursery spade — that's the one with the straight edge — its full length into the ground and completely circle the plant. If the plant leans, one may expect to find a major root in the same direction. This root pruning encourages the development of a new fibrous root system and aids greatly when you move the plant the following spring."

continued

A beautiful small spruce with a lovely shade of gold in the needles caught my eye.

"That's *Picea orientalis* 'Skylands,'" he said. "The color is very fine but you've got to keep it out of full sun or it burns. Many of the variegated conifers will burn over a hot summer, so you've got to take that into account when planning a garden."

We passed a grouping of Japanese white pines (*Pinus parviflora*) that are hardy at least to -10°F. They all had needles shorter than the standard species. I asked what the names were.

"These were all developed by Joe Burke, a well-known developer of dwarf conifers. The first one that grows in a conical mound is Joe Burke #1. The second is Joe Burke #2. And there is #3 and #4. Haven't found any good and colorful names for them as yet."

I smiled to myself over this problem of nomenclature, suddenly becoming aware of that our walk about this small plot of land with its large number of plants gave me the feeling that my guide could be the reincarnation of a naturalist from the 18th Century. Fincham has both a love and respect for these plants and the mind of a true cataloger. I began to wonder if Kew Gardens would be even larger if he had been around when it all began.

Coenosium Gardens is at 425 N. Fifth Street, Lehigh, Pennsylvania 18235. A catalog is \$1.00.

•

Peter Loewer is a frequent contributor to *Green Scene*. He has written and illustrated six books and illustrated one by Bebe Miles (*Wildflower Perennials for Your Garden*). Loewer's *Month by Month Garden Almanac for Indoor and Outdoor Gardening* was published in the fall of '83 by Perigee of the Putnam Publishing Group.



A *Picea orientalis* 'Skylands'



Bob Fincham, proprietor of Coenosium Gardens.



Pseudotsuga menziesii 'Pendula'



Pinus parviflora 'Dragon's Eye'

The American Conifer Society

Bob Fincham's interest doesn't stop with gardening. He is one of the founding members of the new – and quite successful organization – the American Conifer Society, officially formed in January of 1983. At the end of its first membership year it had more than 500 members. Fincham's wife, Dianne, is the editor of the Society's *Bulletin*, which appears four times a year and features lucid and entertaining articles on both the members and their many collections around the world.

About the founding of ACS Fincham says, "I guess it all started in London in 1931 when a Conifer Conference was held by the Royal Horticultural Society of England. They produced a hefty 629-page report they sent to Colonel Robert H., Montgomery of Cos Cob, Connecticut. He had one of the largest conifer collections at that time and sponsored a movement, pledging that if 100 persons evidenced an interest in establishing a society,

a committee would be formed. They got 40 replies. They dropped the idea.

"Then in 1939, Charles F. Jenkins, who owned a hemlock arboretum called 'Far Country' on the outskirts of Germantown (in Philadelphia), attempted to start a hemlock society but that, too, failed. I don't know about the years between but finally in October of 1982, I received a call from Jean Iseli, who owns a wholesale nursery in Oregon, inviting me to a meeting of conifer enthusiasts at the Long Island home of Joel Spingarn. He's been collecting these plants for years, hoping to organize a dwarf conifer society. There was a great deal of interest: a committee developed the Society's name, purpose, and bylaws, finishing its work on December 19. That done, we all met at Spingarn's on January 20, 1983, appointed a Board of Directors consisting of nine nursery owners or holders of extensive plant collections, elected officers, and approved the

bylaws. I was the first president, Tom Dila-tush of New Jersey, the eastern vice president; Richard Bush of Oregon, the western V.P.; with Jean Iseli the secretary and William Schwartz of Philadelphia, the treasurer."

The American Conifer Society will work on nomenclature as the conifer world is expanding with great speed. People are searching for varieties in the wild and working with seedlings or sports the world over. Many of these plants are misnamed, says Fincham, and the addition of these new plants to an already disordered list will only confuse an already confused situation. They hope to establish a national headquarters, a center for education, and an arboretum of named conifers and to fund research projects.

Membership in the American Conifer Society costs \$15.00 per year and runs from July 1 to June 30. Send inquiries to William G. Schwartz, Treasurer ACS, 1825 N. 72nd Street, Philadelphia, PA 19151.



Phragmites reeds dominate Windy Cove at Toms River

photo by Jane Borie

RIVERSIDE GARDENING



by Jane Castle Borie

24

My fascination with the New Jersey pine barren area began in childhood. On summer vacations I picked huckleberries, chewed wintergreen leaves and played with box turtles. Later I rode off on my bike to the woods and a small bog. With the aid of a guidebook I taught myself the names of bog orchids and other choice plants I discovered. On Toms River I sailed in a sneakbox boat and did watercolors in nearby boatyards.

Many times my sister and I sailed past the Victorian Buhler mansion with an allee of twisted red cedars leading to Toms River, New Jersey. Over the years the neglected front lawn slowly became a field, then building lots and houses encircled the mansion.

When the owners of a river front lot decided against building, we were delighted that they accepted our purchase offer. We regretted leaving a nearby summer house with our woodland garden of pine barren plants. The area soil was a fine thin layer of oak leaf mulch and sand above yellow gravel and pebbles, but we could only grow plants that did well in shade. The new

lot provided opportunities for both shade and full sun gardening. The windswept land faced north overlooking a cove with a dock and mooring areas for our sailboats.

planning and the let live approach

Aside from the mile-wide view across Toms River, there were unexpected vistas on the land. Among the cedars and deep

We selected perennials as white as our sails and a few ribber blue delphinium. These we grew from seed, so as young plants they would adapt to a windy location.

grasses, prickly-pear cactus and butterfly weed blossomed, while the east side of the lot was a wilderness of Japanese honeysuckle, sumac, blackberry canes, cedar and maple saplings. The area was home to nesting songbirds, rabbits, chipmunks, and box turtles. We decided against bulldozing the whole area and losing the wildlife, then battling for years to create a suburban type of garden and lawn. We chose to live with nature and grow the distinctive

pine barren plants and wild flowers of the area.

Our first task was planning for the shade garden in the thicket area of cedars and maples. To the northwest we decided to save a cluster of evergreens to act as a windbreak, while we eliminated the saplings that had completely encircled the sole survivor of the Buhler apple orchard. In clearing out this thicket we made a wonderful discovery. We owned a spreading mountain laurel, eight feet high with handsome twisted trunks. The apple tree and the laurel are now the focus of an area we designed around them for our shade-loving flowers and shrubs. We are rewarded by magnificent bloom in springtime.

The garden was off to a better start than the building schedule. The river edge of the lot had been designated a "flood plain area" and hence any construction on the lot was subject to EPA approval.

While the engineering firm made soil tests and designed a filter bed system, we gardened along the property lines. In the high grass our first planting was beach plum and bayberry, available from a local



photo by F. J. Strawbridge

Pink lady's slipper (on Memorial Day)



photo by F. J. Strawbridge

Carolina rose (early June)

IN SAND AND WIND

nursery. These shrubs thrive in exposed locations, so we hoped they would survive the high winter winds. We pulled out alien honeysuckle and sumac to halt their takeover beyond the wildlife area, and we had the time for long sails out to Barnegat Bay.

The following spring we were granted approval of the construction plans by the state, the county, and the borough. We wanted a rugged house to harmonize with the landscape. In New England we located a designer of barn construction homes; he visited our site and oriented our house plans to the river view and the spreading apple tree.

During the construction we wanted a minimum of disturbance to the top soil, field grasses and trees. We got rolls of red Christmas tie and roped "off limit" areas for truck traffic and lumber piles. The land barely suffered during the building construction — until large trucks began dumping their loads of crushed stone behind the house. This unsightly mound established the proper soil level for the septic system filter bed and the improved soil has become a good area for growing melons.

In April we sold the summer home; the new owners agreed that we could transplant shrubs less than a foot high. It was a hectic summer, since we were homeless in New Jersey for three months. We gratefully accepted the loan of friends' unoccupied houses. There was little rain to aid us or to slow down the builders. We were busy mov-

Our last gardening chore is a trip to the bay for seaweed, which will become a vegetable garden mulch the following spring.

ing, mulching, and ever watering treasured laurel seedlings, sand myrtle, bearberry, trailing arbutus, and pink lady slipper orchids.

We wanted our garden to have a natural, rather than a planted look. We decided to include plants similar to those of the pine barrens. Our selection of these plants was largely determined by their hardiness. In the grass near the beach plums, mugo and black pines are thriving, while white rugosa roses take the northwest winds as well as do the native Carolina roses and blue-

berries. In the shade of the apple tree the bell flowers of *Pieris japonica* harmonize with native bell blossoms.

For ground covers we preferred the native plants, rather than the more rapidly spreading vinca or pachysandra. We are hiding bare spots with pine needles and in the shade we planted trailing arbutus, partridgeberry, and wintergreen. These native sub-shrubs have blossoms so delicate, their beauty is lost at a distance. In sunny locations along the paths most frequently walked, we planted box huckleberry, mountain cranberry, pyxie moss, and beach heather. We were glad to find a small nursery specializing in most of these plants. They harmonize with the heaths and heathers, while the long and spreading runners of bearberry have a similar growth pattern to the spreading junipers.

improving soil

We realized our gardening efforts would soon fail, unless we improved the gravelly and porous soil. From suburban Philadelphia a countless number of five gallon pails of compost were hauled to our new garden. Into every hole dug we added and

continued

mixed compost with the soil. We transplanted Florida and Kousa dogwood, Pinxter azalea, *Rhododendron maximum*, Korean boxwood, and wild flowers preferring shade and acid soil. From seed we grew pine barren gentian and eastern lupine, whose deep root systems make transplanting difficult.

We realized we must carefully consider our choice of native specimens, for example, the bracken fern. It grows in handsome masses, but we feared its spreading characteristic. In our small garden we prefer the compact form of the small ebony spleenwort fern. We try to see where plants grow best in the wild, then duplicate these sunlight and moisture areas in our garden. We have had many successes and a few failures. The summer sun proved too strong for a clump of trailing arbutus, even though the soil remained moist. Once the pine barren plants are established, they grow with little further maintenance other than watering during a very dry season.

By September the truck traffic had hard packed a driveway, so there was no need for blacktop. The heaps of sawdust and workmen were gone, but tall weeds flour-

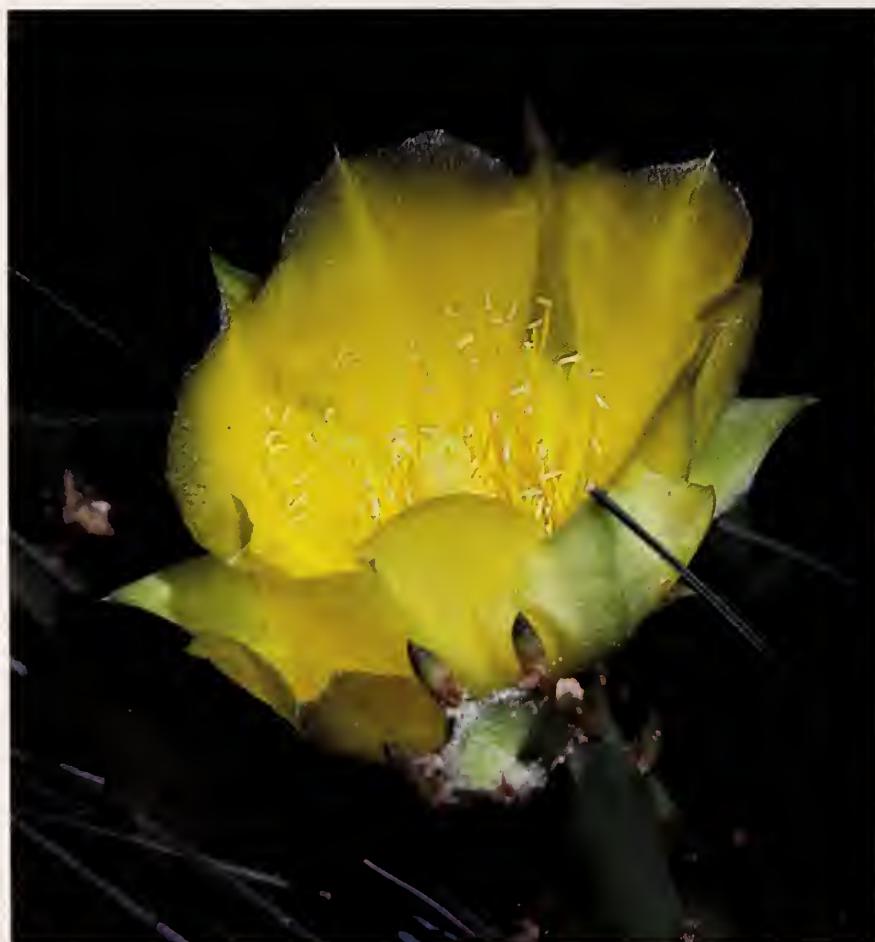


The Pine Barren's gentian was fast disappearing. Fortunately a member of the Toms River Garden Club found some seed, undertook the difficult task of propagating it and has successfully reestablished it in the wild.

ished on the back-filled soil by the finished house. We wanted the area to blend with the field grasses, so we planted quick germinating perennial rye grass seed. Soon the new grass was mingling with the fence line shrubs and tall grasses. As my husband sailed us out of the cove, we looked back with satisfaction at the gray stained house. It "belonged" and had become part of its natural surroundings.

Our garden is now three years old and many plants have spread across bare sand areas. We are enjoying long sails out the river to Barnegat Bay. We have a small vegetable garden and pick our own beach plums, blackberries and blueberries as the catbirds scold us. We enjoy the pink and orange color splashes of mallow and butterfly weed blossoms, as well as the fragrance of the sweet pepperbush, but we wanted more summer flowers. We selected perennials as white as our sails and a few river blue delphinium. These we grew from seed, so as young plants they would adapt to a windy location.

As the August heat haze gives way to clearer skies and bluer water, small sailboats and our box turtles disappear. The



Prickly pear (end of June)



Grass leaved blazing star pollinated by wasps (early September).

photos by F. J. Strawbridge

land changes its color from green to tones of yellow and red. The showy seaside goldenrod is a brilliant accent in the grasses, while the dogwood leaves turn as red as holly berries. The sour gum tree and blueberry leaves are a gorgeous carmine pink, giving color to the garden through late September.

Then the yellows and reds fade to brown as the leaves fall and the pine trees shed some of their needles. These we gather in large quantities for mulch, especially for winter protection over the trailing arbutus. Our last gardening chore is a trip to the bay

for seaweed, which will become a vegetable garden mulch the following spring. Our summer annuals continue blossoming behind the house, and we have a few November sails before the coastal snows cover the garden accenting the mauve and mahogany tones of the sub-shrubs.

During all seasons we go from suburban Philadelphia to Toms River. There is never a month when we do not enjoy the mature laurel and scrub pine along the John D. Rockefeller Memorial Highway (N.J. Rt. 70 through Lebanon State Forest). We are grateful for these miles of woodland, since

the remainder of our route through the pine lands is becoming progressively developed by builders. Some are preserving the wooded areas around the houses and a few local nurseries grow the native shrubs. One of the best opportunities to see a microcosm of the pine barrens is in Judd's Hollylan Nursery exhibit at the Philadelphia Flower Show. We hope more gardeners with sandy soil will consider landscaping with the indigenous plants.

Soon after the wintering duck depart, we know seasons of pleasure by the river will soon be ours. Anxiously we await the wonderful fragrance of the trailing arbutus blossoms and chains of white popcorn flowers on the beach plums. Our garden has a special quality that sandy soil and the unique pine barren plants alone produce. The garden is a blending of harsh growing conditions and delicate blossoms. We are at home with nature on Toms River.

Sources

Judd's Hollylan Nursery
516 E. Holly Avenue
Pitman, NJ 08071
609-589-5812
Landscape service with specialized stock for pine barren planting; no retail plants.

Ocean County Cooperative Extension Service
Agricultural Agent
Whitesville Road
Toms River, NJ 08757
Partial List of Sources for Plant Material Native or Adapted to Seashore Conditions, printed by South Jersey Resource Conservation and Development.

Three Laurels
Madison Co.
Marshall, NC 28753
(catalog)
Ferns, flowers, shrubs, trees, arbutus, partridgeberry, wintergreen, shortia.

Vick's Wildgardens, Inc.
Conshohocken State Road
Gladwyne, PA 19035
215-525-6773
(catalog)
Woodland flowers, ferns, mountain laurel.

Watnong Nursery
Morris Plains, NJ 07950
201-539-0312
Open by appointment
No shipping
Rare sub-shrubs

Jane Castle Borie graduated from The Philadelphia Museum School of Art (now the College of Art) and received an art degree with a botany minor from the University of Pennsylvania. Jane began illustrating books for children and later did both the text and the pictures for books with nature themes. She and her husband have restored a classic sloop for sailing on Toms River. Her gardening in Northwoods and by Toms River has been a life-long avocation. Her appreciation for color and design extends beyond painting to the gardens.

Shrubs and Sub-Shrubs

Botanical Name	Common Name
<i>Arctostaphylos uva-ursi</i>	bearberry
<i>Aronia melanocarpa</i>	chokeberry, black
<i>Chamaedaphne calyculata</i>	leatherleaf
<i>Chimaphila maculata</i>	pipsissewa
<i>Clethra alnifolia</i>	sweet pepperbush
<i>Comptonia peregrina</i>	sweet fern
<i>Epigaea repens</i>	trailing arbutus
<i>Gaultheria procumbens</i>	wintergreen
<i>Hudsonia ericoides</i>	golden heather
<i>Ilex glabra</i>	inkberry
<i>Ilex verticillata</i>	winterberry
<i>Kalmia angustifolia</i>	sheep laurel
<i>Kalmia latifolia</i>	mountain laurel
<i>Leiophyllum buxifolium</i>	sand myrtle
<i>Lyonia mariana</i>	staggybush
<i>Mitchella repens</i>	partridgeberry
<i>Myrica pensylvanica</i>	bayberry
<i>Prunus maritima</i>	beach plum
<i>Pyxidanthera barbata</i>	pyxie moss
<i>Rhododendron viscosum</i>	swamp azalea
<i>Rosa carolina</i>	Carolina rose, pasture rose
<i>Vaccinium corymbosum</i>	highbush blueberry
<i>Vaccinium macrocarpon</i>	cranberry
<i>Vaccinium vacillans</i>	low blueberry

Trees

<i>Acer rubrum</i>	red maple
<i>Amelanchier canadensis</i>	shadbush
<i>Betula populifolia</i>	gray birch
<i>Ilex opaca</i>	American holly
<i>Juniperus virginiana</i>	red cedar
<i>Magnolia virginiana</i>	sweet bay magnolia
<i>Nyssa sylvatica</i>	sour gum
<i>Pinus rigida</i>	pitch pine
<i>Quercus ilicifolia</i>	scrub oak

Herbaceous Plants

<i>Asclepias tuberosa</i>	butterfly weed
<i>Cypripedium acaule</i>	pink lady slipper
<i>Gentiana porphyrio</i>	pine-barren gentian
<i>Hibiscus palustris</i>	rose mallow
<i>Liatris spicata</i>	grass-leaved blazing-star
<i>Lupinus perennis</i>	eastern lupine
<i>Opuntia lumifusa</i>	prickly-pear cactus
<i>Spiranthes cernua</i>	nodding ladies-tresses
<i>Solidago sempervirens</i>	seaside goldenrod
<i>Viola lanceolata</i>	lance-leaved violet
<i>Viola pedata</i>	bird-foot violet
<i>Xerophyllum asphodeloides</i>	turkeybeard

Ferns

<i>Asplenium platyneuron</i>	ebony spleenwort
<i>Botrychium obliquum</i>	cutleaf grape
<i>Osmunda regalis</i>	royal

THE FAIRY ROSE



by Bertha Reppert

If I had to make a choice and could have but one rose in my garden, it would have to be 'The Fairy.' Well named, 'The Fairy' invites nostalgia, admiration and a surreptitious search for hidden pixies.

Shaded like an enchanting pink watercolor wash, this hardy polyantha yields a prodigious number of small double roses in huge trusses. Besides blooming non-stop from mid-June to late November, 'The Fairy' requires less care than any other rose I know.

It is sometimes mistaken for the old-fashioned June blooming rambler 'Dorothy Perkins'; there is a certain resemblance. If, however, you are giving space to mildew-ridden once-and-done Ms. Perkins, you'll not regret switching allegiance to 'The Fairy.'

Not particularly prone to diseases or attractive to insects, and drought resistant, the glossy-leaved shrub adds great rewards to the garden in return for little work. I've never had to weed my 12 bushes, which are planted in several different kinds of locales. It's a rose for beginners as well as for those addicted to easy gardening.

Clipping it back in early spring or late fall to keep it compact or within bounds is all the pruning that's necessary. Our bushes are clustered in threes, each small hedge maintained at a different height from 3 ft. to 5 ft. I have observed that pruning hard in mid-summer encourages longer, more abundant fall bloom.

And the flowers! They are always there, a rich profusion of recurrent fluffy pink cotton candy clusters produced almost as fast as you can cut them. This vigorous display plus easy care proves Mother Nature can be generous when she chooses to be and has created an ideal candidate for landscapes and perennial borders.

In landscaping, 'The Fairy' is effective edging for driveways or walks, as hedges or dividers, or useful as an accent in perennial borders where it is especially beautiful combined with blue delphiniums.

If you can provide six hours of sunlight and good drainage, 'The Fairy' is perfect for city gardens where the tiny box-like leaves are truly tolerant of traffic fumes. Again, because of its undemanding personality, it is ideal as a compact cemetery shrub gracing the scene with continuous flowering and great charm.

For spectacular massed effect, you can

see 'The Fairy' in full array at Hershey Rose Gardens or Longwood Gardens. It will, however, thrive in most gardens, en masse or as a single specimen. Occasional feeding with a good rose fertilizer is the only secret ingredient for prize winning bloom. We use bonemeal and superphosphate in early spring, one cup of each per bush.

I've got to find something wrong with this paragon so I'll admit that black spot can be an occasional problem if the summer proves exceptionally humid. I simply remove and destroy affected leaves, which are soon replaced by healthy fall growth. In fact, the late rosarian Cynthia Westcott

Not particularly prone to diseases or attractive to insects, and drought resistant, the glossy-leaved shrub adds great rewards to the garden in return for little work.

writes in *Anyone Can Grow Roses* (Van Nostrand, Princeton, 1962): "Mildew on buds or foliage is extremely rare and this rose hates to be sprayed so leave it alone to enjoy without work."

We have never protected our Fairy roses even though we have had -10°F weather, late ice storms and a great deal of winter kill among our other roses. This past year, every rose succumbed except 'The Fairy.'

The American Rose Society tabulates hundreds of individual reports from rose growers all over the country. 'The Fairy' rates an exceptional 8.6 out of a possible 10. Anything over 8 is listed separately under "high rated roses" and those rating a 9 can be counted on one hand.

'The Fairy' is a sport of 'Lady Godiva' discovered by hybridizers J. and A. Bentall in 1932 and introduced by Conard Pyle in 1941. American Rose Society reporters gave it high marks for effective garden display, for panicles of flowers persistently in bloom, for its relative immunity to black spot, and for "tip top color."

The small double roses have a big plus in that they dry well and are particularly useful in flower crafts. Especially complementary with silvery artemisias and gray santolinas or soft pebbled sage, they will air-dry naturally, looking for all the world like crushed chiffon. Every rose produced on my nine bushes is used fresh or dried in

flower arrangements or herb wreaths, not a one goes to waste. Tucked into herbal bunches, we create an endless chain of tussie-mussies using this prolific, sentimental little nosegay rose.

My first Fairies were propagated from cuttings begged from a friend some 20 years ago. It was love at first sight. I knew I had to have that dear little rose but with no proper name to order it, the only alternative was to root my own. It was amazingly easy to do.

I used short pieces, preferably an 8 in. or 10 in. side shoot with a heel, taken by grasping the shoot and pulling downward to retain a bit of the main stem. Some people call them "slips," a good descriptive word.

Remove all lower leaves as well as any flowers, dip the bottom of the stem in a rooting hormone (I use Rootone), shake off all excess powder, and firmly bed down your cutting in well-aerated sandy soil in a shaded part of the garden. Pop a quart jar over each slip to give it its own little self-contained greenhouse. The rooted plants will be ready for a permanent place in the sun to grow in your garden come spring.

From August through early fall is an ideal time to root 'The Fairy.' If you can't find a friend with a few slips to share, plants can be purchased from the following sources. They'll be sizeable enough to be blooming, non-stop, in no time.

Sources:

Roses of Yesterday and Today
802 Brown's Valley Road
Watsonville, CA 95076
(Catalog \$2.00)

Joseph J. Kern
Box 33
Mentor, OH 44601

Roses by Fred Edmunds
Wilsonville, OR 97070

Kelly Bros. Nurseries, Inc.
Dansville, NY 14437

Roseway Nurseries
P.O. Box 50, Rt. 1
La Center, WA 98629

Spring Hill Nurseries
Tipp City, OH 45371

Thomasville Nurseries
P.O. Box 7
Thomasville, GA 31792
(who also lists a most uncommon climbing 'Fairy')



Left, top:
One last frenzied fling on 'The Fairy.' As other roses fade, this one achieves deeper color and those last buds continue to explode until bitter cold arrives.

Left, bottom:
These pictures were taken on a sunny south side exposure the first week in November, 1983.

We harvest every truss for our herb crafts, using them fresh and/or dried. We use them for tussie-mussies, nosegays and bridal bouquets. ▼



Bertha Reppert is an herb expert, who has written two books: A Heritage of Herbs, Stackpole Press, Harrisburg, 1976 and Herbs Today. She is the proprietor of Rosemary House, a shop dedicated to the world of herbs and spices.

Bertha Reppert will be the speaker at the January Members Evening "The Romance of Herbs - History and Folklore," at the Pennsylvania Horticultural Society. January 15, 5:30-7:30. Members \$6.00; Guest: \$8.00. Reservations necessary. Make out check to Pennsylvania Horticultural Society, c/o Betsy Gullan, 325 Walnut Street, Philadelphia, PA 19106.

WITCH-HAZEL'S WEIRD BUT WONDERFUL RELATIVES:

A Gardener's Perspective

 by Rick J. Lewandowski and Paul W. Meyer

You might have guessed that the whole clan is an odd lot. After all, the granddaddy of the family, common witch-hazel (*Hamamelis virginiana*), doesn't bloom until October. Then there is that peculiar Chinese cousin, *Hamamelis mollis*, which blooms in February. But what about those other little known relatives? If asked about its family, a witch-hazel might agree that its relatives are a bit eccentric. Nevertheless, they are great companion plants to share a garden with.

A look at the family history might shed some light on the idiosyncracies of the Hamamelidaceae. The witch-hazel family is a small group of deciduous trees and shrubs consisting of approximately 100 species. It is an archaic but widespread family with fossil remnants dating back to the earliest origins of flowering plants 70 to 110 million years ago in the Upper Cretaceous period. The route taken by the witch-hazel family, however, during those millions of years has been a costly one. Of its approximately 26 genera, 13 are monotypic (having only a single species), while many others have long since become extinct. The process of evolution has indeed been hard on the once large witch-hazel family.

To further complicate matters, the family is considered, at best, only a very loosely knit group of plants with many isolated members. This is perhaps best demonstrated by their unusual and diverse floral traits. Some species, such as the witch-hazels (*Hamamelis* spp.), have greatly reduced strap-shaped petals that curl up under adverse conditions. Others are missing some floral parts entirely like *Fothergilla* and *Parrotia*, which lack petals, yet, have brightly colored stamens. Still others, such as *Corylopsis*, bear flowers in pendulous racemes reminiscent of the catkins borne by its close relatives the birch, oak and willow families. All of these traits along with other more subtle characteristics have led most scientists to agree the witch-hazel family is indeed a primitive family. Even so, they are survivors and reasonably successful despite the great losses they have sustained.

Today, the witch-hazel family remains widely, yet, sporadically distributed throughout subtropical and temperate regions of the world. Most species are

found from the eastern Himalayas to China and the Indo-Malayan regions with a few species found in North America and elsewhere.

This discontinuous distribution of species across continents began to intrigue scientists in the mid-nineteenth century. It was not until the striking similarities between the common witch-hazel (*Hamamelis virginiana*) of North America and the Chinese witch-hazel (*Hamamelis mollis*) of Eastern Asia were studied, however, that scientists began to recognize the importance geographic isolation could play in the development of species.

Though small, and in many cases isolated, the witch-hazel family, nevertheless, represents a diverse selection of ornamental species ranging from large trees to compact shrubs which deserve our attention. Among the many fine specimens at the Morris Arboretum, we are fortunate to have several representatives of this family.

sweetgum and parrotia

One of the largest members of the family is the American sweetgum (*Liquidambar styraciflua*), which can grow as high as 100 ft. or more. Though other species of sweetgum are indigenous to Asia, our native sweetgum is considered by many an incomparable tree with its star-shaped leaves, winged stems, and myriad of fall colors ranging from rich yellows to crimson and purple, all often present on the same plant. Though found primarily on low-lying alluvial sites in the eastern and southern United States, sweetgum tolerates a wide variety of conditions, but does require an acid soil to perform its best. The primary limitation for sweetgums, though, is that they require a large area to develop a healthy root system and they don't hold up under urban compaction and pollution.

Another Hamamelid that has potential for more modest sites in the urban garden is Persian *Parrotia* (*Parrotia persica*), a monotypic genus with a single species, occurring throughout Iran. Named after F. W. Parrot, a German naturalist, *Parrotia* is a small to medium sized multi-stemmed tree or large shrub with ascending branches that forms an upright oval habit when young spreading more broadly with age. This plant typically grows fifteen to thirty feet high and, as is true with the best orna-

mentals, provides interest throughout the year. Anytime from late February to March, visitors to the Morris Arboretum can find its flowers open, even when the ground is covered with snow. Lacking petals, the *Parrotia* crimson stamens create an unusually effective display. During the growing season the medium to dark green leaves of *Parrotia* remain remarkably pest-free. In autumn, its foliage is transformed to rich tones of yellow, orange and crimson making it a prized possession for almost any garden. Furthermore, Persian *Parrotia* has attractively exfoliating gray to white bark on older branches, which has been compared in quality to that of lacebark pine (*Pinus bungeana*) and London planetree (*Plantanus x acerifolia*).

Hardy to Zone 4, *Parrotia* tolerates exposed, sunny sites and yet grows well under light shade. While it prefers well-drained acid soils, *Parrotia* is also considered one of the most tolerant species of the witch-hazel family to alkaline soils.

disanthus and buttercup winter-hazel

One of the rarest Hamamelids is *Disanthus cercidifolius*. Native to the mountains of central Japan, this species is virtually unknown in cultivation in this country. It is so rare, it does not have a common name. *Disanthus* is a loose, open growing shrub. The Morris Arboretum specimen, located near the Mercury Loggia, is 10 ft. tall and is equally wide. For most of the year it is inconspicuous, noted only for its pretty heart-shaped bluish green leaves, which are similar to redbud (*Cercis canadensis*). Beginning in September, however, the leaves begin to show tints of maroon. By early October the leaves take on luminous shades of clear red, pink and orange. At the same time, its interesting but inconspicuous flowers are borne close to the branches. It ranks among the finest plants for autumn color, even when weather conditions are less than ideal.

Disanthus is not available from local nurseries but the staff at the Morris Arboretum are working to refine propagation of this fine shrub. Once started the few plants we have seen are adaptable and grow well with minimal care. *Disanthus* is an understory or woodland edge species and our specimen prospers in light shade. In a garden it has potential as a background plant



photo by Paul Meyer

If asked about its family, a witch-hazel might agree that its relatives are a bit eccentric. Nevertheless, they are great companion plants to share a garden with.

◀ *Parrotia persica*

Parrotia persica displays its crimson stamens from late February into March.



photo by R. W. Lewandowski

which can come into its own in the autumn.

The largest genus of the witch-hazel family is *Corylopsis*, the winter-hazels. It has about 30 species, all native to Eastern Asia. A number of winter-hazels are in cultivation, but certainly one of the most useful for the Delaware Valley is the buttercup winter-hazel (*Corylopsis pauciflora*), found throughout Japan and isolated areas of Taiwan. While many of the winter-hazels become rather large and coarsely textured, buttercup winter-hazel remains a broad spreading, densely branched shrub reaching a height of 4 to 6 ft. with equal spread. Its pale pink new foliage expanding to bright green leaves are the smallest of the winter-hazels and add to its fine textured appearance. Buttercup winter-hazel is most notable for its fragrant primrose-yellow flowers produced on pendulous two- to three-flowered racemes from March to April just before new leaves.

Like *Dianthus*, *Corylopsis pauciflora* is a shrub best suited for the shrub border. Because of its unusual blooming period and exceptional flowers, buttercup winter-hazel adds interest to the garden in the early spring and afterwards fades to anonymity in the border.

Though its flowers are sometimes damaged by late spring frosts, buttercup winter-hazel is hardy to Zone 6. It tolerates a range of conditions from full sun to partial shade as long as there is protection from desiccating winds. Fall color is rather inconsistent and can range from little or no color to a good clear yellow. As with most *Corylopsis*, buttercup winter-hazel is an

continued



photos by R. W. Lewandowski

31



◀ ▲

Disanthus cercidifolius. By early October its leaves turn luminous shades of clear red, pink and orange.

Corylopsis pauciflora



photos by Paul Meyer

Fothergilla major



Right, above and below:
Fothergilla gardenii produce
creamy white April flowers that look
like miniature bottle brushes.

easily grown shrub with no significant insect or disease problems; however, unlike most winter-hazels, it will not tolerate alkaline soils and must be planted in acid soils to prosper. When given the proper conditions, though, buttercup winter-hazel is an excellent choice to add another dimension to the spring garden.

fothergilla

The most useful and beautiful of the witch-hazel relatives are the *Fothergilla*, sometimes known as witch alder. These fine shrubs merit a place even in the smallest of gardens. Though the taxonomy of *Fothergilla* has been confused, two species are now generally recognized, *Fothergilla major* and *Fothergilla gardenii*. *Fothergilla major*, a large shrub, growing to 10 ft. in height, is native to the highlands of southeastern United States. It typically occurs on dry rocky ridges. *Fothergilla gardenii*, a compact shrub usually under 3 ft. in height, is also native to southeastern United States but occurs on the coastal plain. It is most commonly found on the margins of swamps. In the Delaware Valley, *Fothergilla* grow well in most garden soils and seems to perform best when given some light high shade.

Fothergilla is especially useful to gardeners because of its multi-season interest. The creamy white flowers that appear in late April look like miniature bottle

brushes. The flowers, borne in terminal spikes, have no petals. The tight clusters of long stamens give *Fothergilla* its distinctive form and texture. In the summer both species have clean foliage and a tidy form. In October, an array of yellow, orange and red leaves (often all on the same plant) again make *Fothergilla* outstanding in the garden.

No *Fothergilla* cultivars have yet been introduced. The Morris Arboretum, however, is evaluating a blue-leaved form of *Fothergilla gardenii*. Its leaves emerge in the spring with a light, waxy coating giving them a soft blue color. Trials so far indicate that this clone is easy to propagate and grows well under a variety of soil conditions.

With a bit of imagination, one could create an entire garden using members of the witch-hazel family. From sweetgum to

dwarf *Fothergilla*, an appropriate species can be selected for every need. But even if you are not interested in hosting a botanical family reunion in your garden, the Hamamelids are an important resource to draw upon for distinctive garden diversity.

Both Rick Lewandowski and Paul Meyer are on staff at the Morris Arboretum, Philadelphia, Pa. Lewandowski specializes in the propagation and production of woody plants while Meyer has made numerous plant collection trips to eastern Asia. Both individuals have considerable experience in landscape design and are focusing their efforts particularly on the development of more suitable plants for urban spaces.

Sources *

- 1. Dauber's Nurseries, York, PA 17405
- 2. Handwrought Gardens, Concordville, PA 19331
- 3. Palette Gardens, Quakertown, PA 18951
- 4. Princeton Nurseries, Princeton, NJ 08540
- 5. Watnong Nursery, Morris Plains, NJ 07550
- 6. Wayside Gardens, Hodges, SC 29695
- 7. Woodlanders, Inc., Aiken, SC 29801

Visiting the Weird but Wonderful Witch-hazel Relatives at the Morris Arboretum				
	Bloom Date	Flower Color	Fall Color	Sources *
<i>Liquidambar styraciflua</i> *	late April	inconspicuous	yellow to crimson and purple	many
<i>Parrotia persica</i> **	late February	crimson stamens	yellow, orange, and crimson	1,3,6
<i>Disanthus cercidifolius</i> **	October	inconspicuous	maroon	none
<i>Corylopsis pauciflora</i> **	early April	primrose-yellow	inconsistent; poor to good yellow	6
<i>Fothergilla major</i> **	late April	white	yellow, orange, and red	2,4,7
<i>Fothergilla gardenii</i> **	late April	white	yellow, orange, and red	5,6,7
*available in most nurseries **hard to find				

the plant finder

A free service for Green Scene readers

If you can't locate a much wanted plant send your name and address (include zip), the botanical and common name of the plant to Plant Finder, Green Scene, PHS, 325 Walnut St., Philadelphia, PA 19106. People who have the plants or seeds you want will contact you to make arrangements about selling or giving them away, mailing, etc.

WANTED

Xanthoceros sorbifolium (yellowhorn) and **Disanthus cercidifolius**. Would like small trees of each.
Contact: Elmer and Jean Worthley, 11821 Bonita Avenue, Owings Mills, MD 2117

Piecrust hosta
Contact: Sir John Thouron, Unionville, PA 19375

Statement of Ownership Management and Circulation (Act of October 23, 1962; Section 4369, Title 39, United States Code)

- 1. Date of Filing: September 30, 1984. 2. Title of Publication: *The Green Scene*.
- 3. Frequency of issue: bimonthly. 4-5. Location of Known Office of Publication and Headquarters: 325 Walnut Street, Philadelphia, Pa. 19106. 6. Names and Addresses of Publisher and Editor: Publisher - Pennsylvania Horticultural Society, Philadelphia, Pa. 19106; Editor - Jean Byrne, 325 Walnut Street, Philadelphia, Pa. 19106. 7. Owner: The Pennsylvania Horticultural Society, Philadelphia, Pa. 19106.
- 8. Known bondholders, mortgages and other security holders holding one percent or more of total amount of bonds, mortgages or other securities: None. 9. Extent and Nature of Circulation:

	Average No. Copies Each Issue During Preceding 12 Mos.	Single Issue Nearest to Filing Date
A. Total No. Copies Printed (net press run)	10,008	10,375
B. Paid Circulation Sales through dealers and carriers, street vendors and counter sales.	253	257
Mail subscriptions	8,603	9,173
C. Total Paid Circulation	8,856	9,430
D. Free distribution (including samples) by Mail, Carrier, or other means, samples, complimentary and other free copies.	61	61
E. Total Distribution (sum of C and D)	8,917	9,491
F. Copies not distributed. Office Use, Left-Over, Unaccounted, Spoiled after Printing	1,091	884
G. Total (sum E and F should equal net press run in A)	10,008	10,375

I certify that the statements made by me above are correct and complete.
Jean Byrne, Editor

BLOW THOU WINTER WIND

Winter Composting by Helen M. Roback



Spring, summer and fall the trip from the kitchen to the compost pile, 250 feet from the kitchen door, is a delightful, diverting walk. Then comes winter. The same trek requires boots, warm jacket, and, on occasion, gloves. Obviously we needed a closer dump site.

About eight years ago we solved the problem: a wire fence used to make a circle approximately 30 in. in diameter. (We used 8½ ft. of fencing and imbedded it about 4 in. in the ground.) To maintain privacy, we put it behind a shrub border, about 5 ft. high, near the house. Two large, waterproof, plastic bags are filled with dry leaves, preferably oak, though any leaves will serve the purpose, and left near the wire frame. Kitchen scraps are deposited in the fenced bin then covered with a handful of leaves. By late spring the wire can be removed, flattened for storage, and the nearly composted material carted away or scattered in place.

Why bother covering the garbage with leaves? We like our neighbors.

Why the emphasis on waterproof bags? Have you tried to spread chunks of frozen leaves?

A broken piece of white marble serves as the last "step" to the compost bin. Light shining from windows on dark winter evenings reveals the white stone (unless there is a snow cover) eliminating the need for a flashlight.

Yes, you can attract skunks – especially on late winter or early spring evenings. Just scuffle your feet or hum a little tune while approaching the area and the skunk will amble away. We've never seen rats near the area.

Ed. note: The horticultural intelligence system advises us that meat and other cooked scraps are the lure for rats. Don't put them on compost heaps.

Helen Roback formerly was part-owner of a local garden center in the Newtown Square area. She currently is the nearest thing to an English gardener in this country: she designs, plans, buys, digs and maintains gardens for clients.

Funny Feeders for Birds by Marie Burns Judge

*The birds adore them,
And the squirrels ignore them!*

Last winter a friend presented me with a "coffee can" feeder filled with sunflower seeds. Suddenly, our "Tree House Terrace" was alive with the color and music of cardinals, black-capped chickadees, house finches, blue jays and sparrows. We fed through Memorial Day weekend because of the cold, late spring and, one afternoon, were astonished to see a grackle on top of the coffee can craning its neck to reach the sunflower seed. The chickadees became so bold that they walked right through the feeder when the seed was low.

We continued to put mixed seed in one of our flowerpots on the terrace floor where the mourning doves and blue jays vied with the squirrels for their turn. Oftentimes, while they were barging at one another, the juncos, sparrows and house finches zip-ped in for a few bites.

Our reward for feeding these fliers was that they nested nearby and awakened us to each summer day with their morning song.

materials needed:

a one pound coffee can
two plastic covers (to fit the coffee can)
picture wire about 28 in. long
a piece of a branch about 12 in. long
plastic tape

procedure:

Remove both metal ends of the coffee can with a can opener. Cut a hole a little larger than a quarter in each of the plastic covers. Make a loop in the center of the wire (with which to hang the feeder) and bring the wire under the can and twist the

ends together securely. Center the can on the branch. Wrap the plastic tape around the branch and wire several times. Fill with sunflower seeds to the bottom of the holes and hang from a plant hanger or tree branch where you can watch what happens.

Marie Burns Judge is a garden historian and lecturer. She has an M.Ed. from Loyola University of Chicago. She has been a Park House Guide with the Philadelphia Museum of Art since The Bicentennial Year and particularly enjoys presenting the tour, Fairmount Park as a Garden.



photo by Marie Burns Judge

House finches. One of them seems to be shy about eating while someone is watching.

classified ads

PLANTED TOPIARY SCULPTURES. Many designs. Shipped anywhere. Free catalog. Credit cards & phone orders. 215-925-4125. **EXOTIC BLOSSOMS**, 510 South 5th Street, Philadelphia, PA 19147.

Sunrooms - Greenhouses
Redwood Window Greenhouses
Full Size Samples on Display
Aluminum, Redwood, Swedish Fir
Custom Design and Installation

SunSpaces Inc.
Main & Walnut Sts.
North Wales, PA 19454
215-699-3747

POSITION AVAILABLE - PROFESSIONAL GARDENER

Responsibilities: "Hands on" maintenance of 17-acre, 20-year-old private garden, supervision of part-time gardener and student intern, and performance of a small number of household chores. Owners are professionals in fields of Landscape Architecture and Natural History, vitally interested in a wide range of plants, intimately concerned with the continued high quality maintenance and intensive development of the garden, and look upon the garden as a learning experience for the gardener, themselves, and visitors.

Qualifications: Minimum 4 years of previous experience. Horticultural educational background, mechanical ability, and enthusiasm about plants desirable.

Remuneration: Salary (based on experience), house, benefits.

Contact: Send resume to William H. Frederick, Jr., R.D. 2, Box 133, Hockessin, DE 19707. No phone calls.

Do you need advice while planning for the coming season's garden? Quality references in Horticulture and Natural History available at the **Tyler Arboretum Bookstore**, 515 Painter Road, Lima, PA 19037. Telephone (215) 566-9133.

This dormant time of year is just right for moving large specimen shade trees and J. Franklin Styer Nurseries offers a wide selection of trees and the experts needed to transplant them.

Take a good look at your garden now and remember where the hot spots were - near the patio or deck? Western facing rooms?

Or maybe you would like a large specimen tree just to enjoy its beauty! Whichever the case call **J. Franklin Styer Nurseries**, Concordville, PA for an appointment. Telephone: 459-2400.

Pressed or silk/pressed combination of flowers garland around wedding, graduation or birth announcements. Full and colorful 8 x 10 pressed in woodlook oval frame \$28.00, silk in brass frame \$32.00. Send invitation along with check, plus \$3.50 U.P.S. & handling. Indicate color choice (spring pastels, harvest, other).

Triple Oaks Nursery & Florist
Rt. 47 S. Delsea Drive
Franklinville, NJ 08322
1-609-694-4272

Introducing Flora-Feed, fantastic plant food. Only pennies per plant per month. For free sample send 39¢ postage/handling. Pan-Nutrition Inc., 380 Parry Road, Warminster, PA 18974.

GREENHOUSES AND SUNSPACES

Complete Design and Construction of Greenhouses for Residential or Commercial Growers. Double glazed tempered glass with maintenance-free aluminum on the outside and clear cedar on the inside. We are also the area dealer for **Vegetable Factory Greenhouses** which have double acrylic panels, either clear or frosted and, because no foundation is needed, they are an easy do-it-yourself project. Contact **TOTAL SOLAR, INC.** 279-6646.

UNUSUAL RHODODENRONS

Approximately 50 varieties. Nursery is ¾ mile East of New Jersey Turnpike, Exit 7A and directly off Exit 7 of I-95. Send us your want list. By appointment only. **INDIAN RUN NURSERY**, Robbinsville, NJ 08691. 609-259-2600.

ATTENTION FLOWER ARRANGERS

Imported Japanese kenzans (needlepoint holders) all sizes. Also shippies and shears. Write for price list. **INDIAN RUN NURSERY**, P.O. Box 160, Robbinsville, NJ 08691. (609) 259-2600.

GARDEN ACCENTS

Just arrived from our last trip to the orient: a Ching dynasty fishbowl, pair of garden seats and assorted antique Chinese country vessels at surprisingly low prices. They may be just what your plant room needs! **BUYING and SELLING** antique and modern garden statuary, planters and benches.

Elizabeth Schumacher's Garden Accents at J. Franklin Styer Nurseries, 914 Baltimore Pike, Concordville, PA. 459-2400

MEADOWBROOK FARM

"More than just a greenhouse." We **specialize** in the rare and unusual. Ivies, cactus and succulents, ferns, begonias, orchids, foliage plants, topiary, decorative pots and statuary. Custom orders 12 miles from center city.

1633 Washington Lane
Meadowbrook, PA
887-5900

Ways with Wildflowers - a fine booklet representing many years of experience at Bowman's Hill Wildflower Preserve. This publication strives to give an understanding of the natural habitats of native plants. An appendix gives needs and characteristics of 300 wild plants. Also included are directions for handling seeds. \$4.70 plus 28¢ PA sales tax. (Postage and handling 1-3 copies 75¢, 4-6 copies 95¢.) Booksellers discount. Bowman's Hill Wildflower Preserve Association Inc., Washington Crossing Historic Park, Washington Crossing, PA 18977.

GARDENER WANTED

Small Estate in Haverford. Use of small apt. with 2 BR, LR and KIT, Bath. 3-day week. Send letter to M.G., 2nd Floor, 308 Walnut St., Philadelphia, PA 19103.



IT ISN'T EASY BEING GREEN unless you have a QED residential Lord and Burnham greenhouse added to your digs. We design, erect, and equip to satisfy your rules of green thumb. Grow anything green year-round (except perhaps frogs). **QED, INC.**—offering expected amenities to the Philadelphia Main Line and Chestnut Hill. 688-1514. P.O. Box 161, Villanova, PA 19085.

Specializing in the Unusual ... Dwarf rhododendrons, deciduous and evergreen azaleas, dwarf evergreens, companion plants. Catalog \$1.00, refundable. The **Cummins Garden**, 22 Robertsville Road, Marlboro, NJ 07746. Phone: 201-536-2591

OUTDOOR FURNITURE

To replace or relax

Hill Co.

8615 Germantown Ave.
247-7600

ARBORICULTURE SERVICES

Custom Pruning and Complete Care of Trees and Shrubs to Promote Healthy Attractive Plants

McFARLAND LANDSCAPE SERVICES

Phila. - 438-3970

East Mont. Co. - 646-7222

Main Line - 688-6644

ROSE VALLEY NURSERIES

Recipient of the 1983 Philadelphia Flower Show, Inc., Silver Trophy. Visit our garden center and landscape design office for seeds, plants, and plans. Staffed by professional horticulturists. 684 S. New Middletown Rd., Media, PA 19063. (215) 872-7206.

WOODLANDERS

RARELY OFFERED DIXIE NATIVES AND INTRODUCTIONS, woody, herbaceous, all nursery-grown. Many hardy northward. Send S.A.S.E. (long) for mail-order list. **WOODLANDERS GS**, 1128 Colleton Ave., Aiken, SC 29801.

DWARF & UNUSUAL CONIFERS, JAPANESE MAPLES. Visitors welcome. Educational dwarf conifer display. Send 80¢ in stamps for informative booklet. Phone 609-585-5387. **Dilatush Nursery**, 780 Rte. 130, Robbinsville, NJ 08691

GREENHOUSE REPAIRS AND MAINTENANCE

Sales and Construction

GEORGE C. MATT, INC.


212 St. Georges Road, Ardmore, PA 19003
215-649-2745

THE WORLD'S LARGEST and most famous seed catalog. Over 200 pages, 4,000 varieties, 1,000 color pictures. A major book of reference. The Encyclopedia of how and what to grow from seed. The Bible of seed catalogs to gardeners in over 100 countries. Vegetables, pot plants, exotics, perennials, alpine, rockery, latest and best annuals, trees, shrubs, bulbs from seed with rare items unobtainable elsewhere. Write for free copy, allowing 3 weeks or enclose \$2.00 for First Class mail: **THOMPSON & MORGAN, INC.**, Dept. PHC5, P.O. Box 1308, Jackson, NJ 08527.

Green Scene covers, full page pictures, maps, newspaper articles laminated and framed. Ideal Christmas gift. Call **SIGN PRINTERS**, 215-825-8799. For further information, write Box 2, Miquon, PA 19452.



The Canada geese at the edge of the pond return every year to Deerfield in Rydäl. The trees reflected in the pond are native tulip poplars. See page 4.

A photograph of a person with blonde hair, wearing a white t-shirt, pushing a black wheelbarrow filled with small white flowers. They are walking down a gravel path in a lush garden. The path is bordered by dense green foliage and trees on the left, and a stone wall and more trees on the right. A large wooden barrel is visible on the right side of the path. The scene is brightly lit, suggesting a sunny day.

*Coming Down
to Earth:
A City Garden
for all Reasons.*

See page 13.

THE green scene

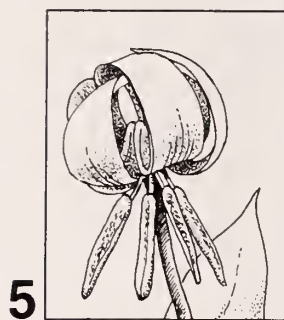
HORTICULTURE IN THE DELAWARE VALLEY

MARCH • APRIL • 1985

\$1.50



in this issue



**3. Reading Garden Catalogs:
An Idealist Becomes Skeptical**
Elizabeth P. McLean

**5. Watching Red Clay Creek's
Changing Moods**
Rick Darke

**10. Searching for New
Strawflowers: A colorful quest**
Bonnie J. S. Day

**13. Coming Down to Earth:
A City Garden for all Reasons**
Ann Jarmusch

**17. A Lot for Less: Intensive
Vegetable Gardening**
Ernesta Drinker Ballard

**22. The Art of Pea-Staking
Perennials**
Charles O. Cresson

**24. Raising Distinctive
Daffodils**
Betty Pease Krahmer

**27. Growing Orchids in the
Windows**
Jerry Medeiros

30. Letters to the Editor

30. The Plant Finder

**31. Beautifying Narberth
Train Station**
J. Jeffries Eyster

35. Classified Advertising

Front cover: Crunching pebbles underfoot, a gardener travels a long path that hugs a small park's 100-year-old wall on Kenneth Parker's property. Flowering plants, ferns, shrubs and trees were planted, and old granary barrels were turned into planters. See page 13.

photo by Lynn Rosenthal

Back cover: photo by Rick Darke

Volume 13, Number 4

March/April 1985

THE PENNSYLVANIA HORTICULTURAL SOCIETY

325 Walnut Street, Philadelphia, Pa. 19106

Telephone: 215-625-8250

Horticultural Hotline: 215-922-8043

Robert S. Ryan / *Chair*

Jane G. Pepper / *President*

Jean Byrne / *Editor*

PUBLICATIONS COMMITTEE:

Adele G. Greenfield / *Chair*

Judy Foley / *Vice Chair*

Charles W. Heuser

Natalie Kempner

James J. McKeehen

L. Wilbur Zimmerman

Kathryn S. Andersen

Darrel Apps

Anne S. Cunningham

Designer: Julie Baxendell, Baxendell / Lambeck Associates

Separations: Lincoln Graphics **Printer:** Havertown Printing

THE GREEN SCENE, (USPS 955580) Volume 13, No. 4, published bimonthly, January, March, May, July, September, November, by the Pennsylvania Horticultural Society, a non-profit membership organization at 325 Walnut Street, Philadelphia, PA 19106. Subscription: \$8.50 - Single Copy: \$1.50. Second class postage paid at Philadelphia, PA 19106. • **POSTMASTER:** Send address change to THE GREEN SCENE, 325 Walnut Street, Philadelphia, PA 19106.

© Pennsylvania Horticultural Society, 1985

Green Scene subscriptions are part of the membership benefits for:

Pennsylvania Horticultural Society


Maryland Horticultural Society

Frelinghuysen Arboretum

Skylands Arboretum

Blithewold Gardens and Arboretum

Reading Garden Catalogs: *An Idealist Becomes Skeptical*

 by Elizabeth P. McLean

I am addicted to garden catalogs, the perfect antidote for winter doldrums or spring discouragements. With each one that arrives, I can dream of the garden that has not been since Eden, but somehow seems possible anew each year. I imagine a garden where there are neither slugs on the hostas nor mildew on the phlox; where rabbits do not eat my carrots, nor woodchucks my string beans. I see a lawn with no crabgrass, a spring when downpours do not wash away my seedlings, and a summer when drought does not dry up my garden. Like all gardeners, I live on hope.

Optimist that I am, however, I have finally learned to read garden catalogs with more care. I have learned to watch out for fancy names and to look for the "real" or Latin names as well, for therein lies the hook. One catalog describes as "new" the "silver lace vine," which it likens to an "ocean spray." That sounds so much nicer than

"fleece vine" (or *Polygonum*), which is its old name, a rampant grower that will take over everything in sight. There is no excuse for presenting it to the innocent as a treasure.

One of the most amusing aspects of catalog reading is seeing how various nurseries and seed houses describe such aggressive plants, for example, Japanese honeysuckle (*Lonicera japonica*), which is lovely on someone else's fence, but never one's own. When the silver lace vine, is described as "incredibly fast growing," that should certainly be a clue. "Set plants 18 inches apart, expect full coverage in 90 days" is another. Crown vetch (*Coronilla varia*) may do well on turnpikes, where it certainly "spreads rapidly and ... chokes out weeds," but it certainly has no place on my front bank. When one catalog discretely remarks that bee balm (*Monarda*) can be "invasive," I have a mental image of tank-

continued



Illustration by Will McLean

Silver lace vine (*Polygonum aubertii*): ...like an ocean spray

treads across the garden.

Some of my favorite catalogs are those for rock garden plants. Many of these are much too difficult for the amateur, appealing to the experienced rock-gardener who is happiest when growing the hardest-to-grow. I realize that this kind of gardening is not for me when I read the catalogs. How do you "withhold summer and fall water" in Philadelphia, or "protect from winter wet"? The American Col. Lawrence Johnson, who designed the great garden "Hidcote" in England, was supposed to have made his dinner guests put their wraps around new tender plants when an early frost arrived one evening. How can I protect such a precious summer rain-hater as *Primula edgeworthii*?

There is no excuse for presenting it to the innocent as a treasure.

At least rock garden catalogs give the reader fair warning that their plants can be tricky to grow. I would rather have that than such vagueness as "not reliably winter hardy." Where? In Rhode Island or in Philadelphia? "Tender," for me, describes a piece of beef better than it does a plant; it is shorthand for "will not stand frost, much less freezing." I wish all catalogs had a zone-hardiness map (to remind me of the vagaries of where I live) and listed the hardiness area for the plants advertised.

The least mentioned item in catalogs, it seems to me, is the width of a plant. My shasta daisy (*Chrysanthemum maximum*) grew two feet tall, just as promised. I should have realized what "divide root stocks every other year to keep plants compact" meant; my plant, undivided in that "other" year, soon became four feet wide, crowding out some choice favorites.

Height, of course, is important. I have just seen an Atlas cedar (*Cedrus atlantica*) planted as part of foundation planting; it

can ruin the foundation. The Atlas cedar may take a while to reach its ultimate height of 120 feet, but it is a tree that needs an expanse of lawn around it, the specimen tree associated with great English estates. If a catalog does not give "ultimate height" (and very few do), I refer to my Wyman's *Gardening Encyclopedia*, which also gives me the zones and cultural instructions.

Very few catalogs fill my ideal requirements of listing plant with common name and Latin name, hardiness zone, height, width and cultural requirements. (Burpee, Park Seed, Wayside Gardens and White Flower Farm all do this in varying degrees, and are the reliable backbone of my own catalog library.) When I started gardening I used to tell my more experienced friends: "Don't give me the Latin name, just tell me its 'real' name." I finally learned that the Latin name is the "real" name and the only accurate one. By sticking to nurseries that use the Latin name (along with the common) name, you can be sure of what you are ordering. Is the "new Royal Red Maple," that has "rich dark red" leaves throughout the growing season a true red maple (*Acer rubrum*) or just another red-leaved variety of the Norway maple (*Acer platanoides*)? Its catalog provides no clue. I have learned not to order from catalogs that don't speak Latin, and fortunately kind friends don't say "I told you so."

Catalogs raise other questions for me. Is "bigger" always better? How many plants in the same catalog can be the "finest"? But it is time to get back to my catalogs and put in my belated order for this year's plants; a new vine called "Beautiful Dreamer," promises "rapid growth" and might be just the thing for an unsightly corner.

Elizabeth McLean is a garden historian with a particular enthusiasm for native American plants which need care but not coddling.

Some Catalog Translations:

Staking suggested _____	Plant lies down unless tied up.
Naturalizes well _____	May take over your garden.
Fast growing ground cover _____	May take over your property.
May need winter protection _____	Wrap in burlap or mulch heavily.
Divide every three years _____	Be ready to divide more often.
Fast grower _____	Do not use as foundation planting.
Needs good drainage _____	Plant on an ash-heap.
Brilliant color _____	Will overpower all other shades.
Difficult to establish _____	Better enjoy in someone else's garden.



Illustrations by Will McLean

Monarda may be invasive.



Primula edgeworthii: withhold summer and fall water



WATCHING RED CLAY CREEK'S CHANGING MOODS

by Rick Darke

The first photo in the author's year-long study of Red Clay Creek in Chester County, Pa. The photo was taken on March 31 at 4:30 pm.

Seven o'clock on a cold January morning: the creek is silver with a layer of ice. The remains of wildflowers that bloomed along the banks last summer are now muted colors with a cover of frost. I'm standing on the bridge leaning over my camera, which, held steady by its tripod, is focused on the view upstream. A battered station wagon slows as it approaches the bridge. As it passes me, one of its many occupants rolls down a steamy window to shout "Get a job!"

Had they stayed for a reply, I would have explained gleefully that, *this is my job*, at least in part. I'm working on my powers of observation. I'm observing for my own selfish pleasure and also for the joy of sharing new experiences with students and friends.

My photographs of that January morning are part of a study begun in late March, 1983. I cross the west branch of the Red Clay Creek each day as I commute from home in Newark, Delaware to Longwood

Gardens. The view upstream is inviting, and in the past I'd given it many a casual glance while going over the bridge. My mind's image included two larger trees leaning out from opposite banks to form an arch over a fallen companion, whose still sturdy trunk spanned the creek. I was vaguely aware of this particular view's changing moods and the power they had to affect my own, but I had little understanding of how these changes came about.

After lecturing in a winter botany course on the rewards of extending plant studies into the coldest season, I realized I wanted to develop an all-seasons intimacy with this creek. I resolved to start out a little earlier each morning, allowing time for notes and photographs. The bridge railing offered a convenient fixed point for my tripod, and I decided to observe only those things included in my camera's upstream field of view. Excerpts from the first year's notes follow.

spring

Late March comes after a struggle through innumerable gray skies, and with spring's drama due, this seems a good starting point. The grayness is reflected in the landscape and, because it has been around so long, it now seems less an opportunity for serene introspection and more a dull annoyance. There is little color along the creek except for the green basal rosettes of two European invaders, garlic mustard and poison-hemlock. Only the white bark of leaning sycamores contrasts against the grays, making up for the absence of sunny spots and shadows in this diffuse light.

The tops of distant trees meld into a line that slopes from the hill above the south (left) bank to the north bank floodplain. The natural bridge in center view is a tulip tree. Two others of similar size still stand near its base along the road's edge. I know from older photographs of this area that it toppled three or four years ago, and I wonder

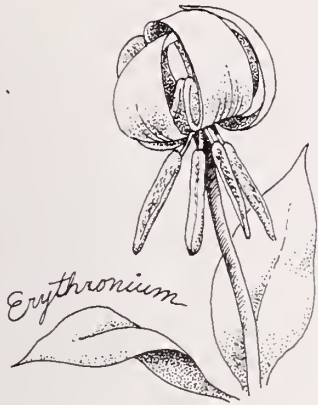
continued



May 9, 7:45 am. The shadows of the first strong morning sun.



August 18, 4:15 pm. A snowy egret flies through midsummer's haze.



There are no footprints on the bridge but my own; however, tracks on the fallen tulip tree tell that it is still the choice of animals wishing to stay dry while crossing the creek.

how much time will pass before it breaks and washes downstream and out of sight.

New leaves of box elders and the delicate yellow flowers of spicebush are visible along the banks by April 15th. The afternoon sun, stronger now, is reflected off thousands of mayapples that cover the floodplain. In between and under these green parasols, trout lilies and spring-beauties are in full flower.

Heavy rain during the last weeks of April encourages rapid growth of touch-me-not seedlings on the edge of the floodplain. Droplets lay as bright jewels on the unwettable leaves and are soon joined by amber scales falling from the slender winter buds of a large beech overhead. The trees have erupted into a light green haze of new leaves, softening the scene. A dogwood on the south bank is just reaching its flowering peak, and stands out white against the expanding greens.

The sun arcs higher and higher each day approaching June 21st, the summer solstice. The morning of May 9th is the first in which the sun has burned completely through the clouds and cleared the south hill in time for my 7:30 am arrival. Its rays cut across the creek, brilliantly illuminating the north bank and leaving the south bank in deep shadow. Past the fallen tulip tree, tall trees arching over the water form a shaded tunnel almost completely obscuring the creek. The scene appears flattened, the depth of view I have enjoyed suddenly gone. The day remains cloudless, however, and when I stop on my way home the area is backlit and the depth has magically returned. The new year's leaves are still quite translucent and glow when viewed against the sun.

Each May rainstorm bends branches successively lower as the enlarging leaves hold on to more water. By June 1st the canopy has completely filled in and the slope of the distant tree line is no longer visible. Poison-hemlock blooms five feet tall

along the banks, looking very much like giant queen-anne's lace. At the water's edge the flowers of reed canary grass dangle yellow anthers in the wind. The tulip tree has broken near its resting point on the north bank and now lays closer to the water's surface.

summer

In this wooded scene July and August have little of the drama of spring or fall. The days are long and seem pleasantly alike. The high sun gets in my lens and adds to the haziness. Three times kingfishers and great blue herons have flown while I fumbled with my camera but today, August 18th, a snowy egret is much more accommodating, allowing me to capture its arc from the water to a new stance on the fallen tulip tree.

A few tired leaves appear in September, adding specks of color to an otherwise still green mass of foliage. The flowering stalks of poison-hemlock are now heavy with seed and some have fallen into the creek, landing on a soft green mat of duckweed.

fall

In October, virginia creeper claims credit for the first true fall color, turning scarlet where the sun hits it 60 feet up in an ash leaning over the creek. The dogwood's leaves begin to bronze and spicebush and box elder soon add their yellows. The sunny disturbed areas next to the bridge and along the roadside are a profusion of asters and goldenrods.

Some of the most spectacular yet short-lived color along this stretch of the creek belongs to the beeches. An older tree on the floodplain turns gold during the third week of October, then quickly browns with a hard frost on the last day of the month. As the leaf cover continues to thin, the depth of view returns and the slope of the distant tree line is sharply redefined.

The banks are leaf-littered by early

November. Two black cherries arching over the fallen tulip tree are bright orange, as is a Norway maple in sun on the south bank. Further upstream and less exposed, other Norway maples are still green. These naturalized northerners and our native red oaks will be the last to color.

Rain on the 11th darkens the tree trunks. The brightly colored leaves contrast so strongly with the wet bark that they become separated from their points of attachment and appear to be floating. The storm front is still leaving the area when I make my 4:30 pm run by the bridge, and the setting sun colors the remaining clouds.

More rain mixed with sleet during the last two weeks of November washes the last leaves from the trees, and December begins stark and nearly colorless. Now that there is less to distract my eyes, a slight red haze far upstream on some barely discernible vegetation becomes a curiosity. With closer inspection it proves to be a mass of bittersweet covering a prostrate silver maple.

The leaves are no longer around to display the movement of the wind, and the stillness of the scene encourages further examination. Walking out on the fallen tulip tree to test its strength, it bends more under my weight than it did this past spring. The decaying bark is loose under my feet and has fallen off a section of the trunk near its base on the south bank. Black laces of the shoestring fungus crisscross the exposed wood, leading to conjecture that this disease may have been responsible for the premature death of the tree. Back at my familiar vantage point on the bridge, I can see dead limbs in the crowns of the two tulip trees that remain standing. Perhaps compaction of their roots by the road's edge has weakened them and made them susceptible to attack.

winter

More than four inches of rain on Decem-

continued



November 11, 4:30 pm. Early evening on a rainy fall day.

8

ber 12th swell the creek four feet above normal by evening. The tulip tree is hit with the full brunt of the muddy current, and I expect it soon to be carried away. Returning in the morning, however, it is still in place over the creek, although it is now slightly angled downstream, toward me. Its remaining roots kept its base anchored to the south bank. The trunk served as a huge lever, knocking over a 30 ft. tall Norway maple as the water attempted to wrench the tulip tree free from the bank.

The flooding changes things. The base of a tree that formerly grew half a mile upstream is now lodged against a leaning sycamore. Most of the leaf litter that covered the floodplain has been washed away, exposing the blanched growing tips that will become next spring's mayapples. The leaves that remain are wrapped tightly around the slender stems of woody seedlings that strained the floodwaters as they flowed past. When the creek returns to its normal level, a new, rock-strewn island emerges just downstream from the fallen tulip tree.

Temperatures drop steadily and by December 21st the ground is frozen solid. Sudden, heavy rain the morning of the 22nd rolls quickly over the hard soil and into the creek. The temperature shoots from the twenties to nearly fifty degrees by noon and, standing on the bridge, I am swallowed up by mists rolling down the valley. When this gentler flood recedes, the island has a new layer of silt.

Three inches of snow brighten the scene eleven days into the new year. There are no footprints on the bridge but my own; however, tracks on the fallen tulip tree tell that it is still the choice of animals wishing to stay dry while crossing the creek. On the evening of this first snowfall the sun sets to the left of the nearest leaning sycamore. One week later, with a half foot of additional snow blanketing the ground, the setting sun is directly in line with the sycamore's trunk and appears to be burning through it. Another week passes and the sun, past the sycamore and heading to the right of my frame, reflects off an ice-covered creek.

Winter has few surprises left, so it becomes a game of waiting out the gray skies as the days gradually lengthen. Anticipation of the coming spring is heightened by a few late February days with prematurely high temperatures, and the bitter-sweet fruits that covered the silver maple are replaced by a haze of the tree's own tiny red flowers as the last remnants of snow and ice dissolve.

The warming air carries new fragrances as I stand on the bridge at the end of March, taking inventory of a full year's changes. The scene is undoubtedly transformed from when I began watching a year ago; the greatest change, however has been in my perception of it. I've become a more efficient observer. I've learned the structure of the scene, and know where to look for the details that set today apart from yesterday or tomorrow. Crossing the creek now I feel a pleasant tug, as if an old friend has offered to share new secrets with me, and my curiosity no longer allows just a casual glance.



plant list

Common Name	Scientific Name
ash	<i>Fraxinus pennsylvanica</i>
beech	<i>Fagus grandifolia</i>
bittersweet	<i>Celastrus orbiculatus</i>
black cherry	<i>Prunus serotina</i>
box elder	<i>Acer negundo</i>
dogwood	<i>Cornus florida</i>
duckweed	<i>Lemna minor</i>
garlic mustard	<i>Alliaria officinalis</i>
mayapple	<i>Podophyllum peltatum</i>
Norway maple	<i>Acer platanoides</i>
poison-hemlock	<i>Conium maculatum</i>
red oak	<i>Quercus rubra</i>
reed canary grass	<i>Phalaris arundinacea</i>
shoestring fungus	<i>Armillaria mellea</i>
silver maple	<i>Acer saccharinum</i>
spicebush	<i>Lindera benzoin</i>
spring-beauty	<i>Claytonia virginica</i>
sycamore	<i>Platanus occidentalis</i>
touch-me-not	<i>Impatiens capensis</i>
trout lily	<i>Erythronium americanum</i>
tulip tree	<i>Liriodendron tulipifera</i>
Virginia creeper	<i>Parthenocissus quinquefolia</i>

•

A graduate of the University of Delaware, Rick Darke is assistant taxonomist and continuing education instructor at Longwood Gardens. His interests include the flora of northeastern North America and botanical illustration.



January 19, 4:20 pm (1984). Sunset on six inches of snow.

SEARCHING FOR NEW STRAWFLOWERS:

A colorful quest

 by Bonnie J. S. Day



Ted McKinley stands amid a September sea of strawflowers (*Helichrysum bracteatum*).

Bombarding strawflower plants with X-rays may seem like an unusual retirement occupation, but that's just what Ted McKinley of Wilmington, Delaware has chosen for his second career. McKinley, a former research chemist, is breeding strawflowers (*Helichrysum bracteatum*) for a wider range and improved color, an undertaking that has produced 18 new flower colors and a thriving business as well.

A dark red dahlia tuber given to him when he was five years old was McKinley's introduction to gardening. Within a few years, the boy had a bushel of them. It was the beginning of an active love of plants and gardening that has remained with him all his life.

McKinley's wife Sue got him interested in strawflowers. Well-known for her work with dried plants and flowers, she is in charge of flower arrangements and decorations at Hagley Museum. She uses many dried arrangements there and strawflowers, with their stiff symmetrical form and wide range of colors, are one of the best flowers for that purpose. McKinley became aware of the need for improved strawflower colors when he began growing them in quantity for Sue. As the time for his retirement approached, it occurred to him that developing new strawflower colors would be an intriguing project, one that could satisfy his scientific curiosity and love of gardening as well as produce something of value. A chance sale of his excess strawflower harvest to a Wilmington florist shortly before his retirement in 1979 gave McKinley the idea that such sales could help finance his breeding project. It was an idea that worked. Today, McKinley's organization, Barley Mill Bouquet Everlastings, is a popular wholesale business with annual sales of 100,000 strawflowers and 30,000 stalks of blue salvia (*Salvia farinacea*). Among his customers are museums and museum shops, foundations such as Colonial Williamsburg, professional arrangers and other commercial concerns. Proceeds from the enterprise contribute substantially to his breeding and growing costs.



Shell Pink



Permanent White



Indian Chief



Light Rose, a new selection

how to create the new colors

How to develop new strawflower colors was a difficult problem to solve. As senior pigments research supervisor for the DuPont Company, McKinley headed a group working with X-ray and electron beam technology. X-rays seemed to be a good way to induce mutations in plants, a hunch confirmed by his research. He found that they had been used successfully in changing color in other flowering plants, notably chrysanthemums in the Netherlands. He also learned that few plant breeders had worked with flowering plants and radiation. What information existed was sketchy and incomplete, rarely specifying how the irradiation was accomplished. Nor could he find evidence that anyone had worked with strawflowers. McKinley was truly on his own as he spent the first year of his retirement researching, experimenting and organizing.

The tetraploid strawflower (having twice the normal number of chromosomes) developed by Roggli, breeder of the Swiss

giant pansy, was his first subject. On it he chose to use three different wavelengths: copper, chromium and tungsten. Using X-ray equipment at the DuPont Experimental Station, he found that tungsten, a shorter, more penetrating wavelength than the other two, was most effective. He discovered that it took large amounts of radiation to get even the smallest mutations, anywhere from one to four hours, and up to 100,000 times the total radiation used in a dental X-ray. More often than not, the radiation caused little or no change, producing about one desirable mutation in every 500 plants. Those that did occur took many different forms: a few freaks, and many variations in plant and leaf size, tissue succulence, flower form and color.

With the irradiation process worked out, McKinley was ready to begin developing new colors. The procedure he established is one that he still follows today. Seeds, seedlings and small plants are irradiated during January and February. They are grown under lights and in the greenhouse

until they can be set out in his 3,000 sq. ft. experimental plot in May. Then begins the evaluation process that continues through the growing season, harvest, and into the following year.

It takes two full growing seasons to determine a plant's potential. The first year, McKinley grows only the original irradiated plant and observes both the plant's growth habit and its flowers. Flower color is the most important factor in selecting plants to propagate for the next year, but he looks for variations in flower form, too. Petal shapes can be rounded, spiky or in-between, their arrangement varying from a whorled, cabbage rose-like form to separate and star-like.

Healthy plants with desirable flowers are carried over to the next growing season by means of vegetative propagation. Tetraploid strawflowers will not grow true from seed without many generations of selective culling to partially stabilize the flower color, so taking cuttings is the only practical means of propagation for McKinley's

continued



Pink Sparkle

purposes. It is a tricky task and critical to the development and continuation of his selections. The cuttings are generally taken in August; they must be made at a very specific stage of growth, a point between succulence and the first hint of woodiness. Thanks to the radiation-induced mutations, the time it takes each plant to reach that point varies widely, so they must be inspected constantly. Cuttings taken from outdoor plants don't root as readily as those of greenhouse plants either, and he risks losing a color forever if the cuttings fail to root.

Three cuttings are usually taken from the original plant. They become the mother plants from which more cuttings are taken. McKinley goes through an average of three generations and produces several dozen plants of each selection before they are ready to go outside the following spring. Then with a larger population to observe, he can better evaluate the plants' potential. They often behave differently from the original plant, the most common variations being in vigor and yield. A new color is of little value if the plant it comes from is weak or a poor producer of flowers. Occasionally, a flower's color will not fulfill its early promise. Most of the flowers produced in the experimental plot can be used, however. They are sold in mixed bouquets or monochromatic bunches, and comprise one quarter to one third of the total strawflower harvest each year.

harvest

The strawflowers are harvested individually over a period of about five months beginning in July. Like propagation, it is a labor-intensive job. Each flower matures at its own pace and is usually cut when one row of petals has unfurled and the center is hard. As they dry, the flowers continue to open, so McKinley must check their form and color periodically. A "perfect" strawflower is composed entirely of colorful bracts, never opening completely to ex-

pose the true flowers at its center. Full-blown flowers are not as salable as perfect ones. Light fastness, or the ability of the dried flower to retain its color upon exposure to light, is another important attribute. Though most of the pastel strawflowers eventually fade to ivory, the speed with which they do it varies greatly.

which colors are marketed

The new colors must pass one last test: salability. Popular colors that sell well are propagated in greater numbers for the next year, less successful ones are not. When he is sure that he has a stable, salable color, McKinley names it and offers it for sale.

Not all of the colors he has developed have survived. Some have been lost through the vagaries of nature, others have been dropped as customers' or even his own interest in them has waned. In 1984, eight of the 17 colors listed in Barley Mill Bouquet Everlastings' catalog are his introductions: Permanent White, Shell Pink (cool, pale pink), Pink Sparkle (sprightly bright pink), Old Rose (soft, pale rose), Full Pink (vibrant and dark), Burgundy (the color of sparkling wine), and Indian Chief (bright yellow tipped with orange). The eighth color, Fall Beauty, was lost after the list was printed. None of these colors has been formally introduced or registered. McKinley prefers to keep them as his own exclusive collection, one that changes as his whims, the customers' needs and the luck of growing do.

Permanent White was one of the first colors McKinley developed. White flowers grown from commercial seed soon fade to ivory, so a pure, long-lasting white is of great value to flower arrangers. This permanent white has also proved useful as the parent of some of the colors that McKinley has since produced. He has found considerable novelty in the flowers of plants growing from the seed of his white flower and that of other irradiated plants. In fact, these secondary mutations have been so promising that he has been using them more and irradiated first-generation plants less.

McKinley next focused on colors in the pink family. Developing those pinks was a matter of chance as much as intent due to the random nature of the mutations. It was a fortunate coincidence, however, as flower arrangers do request more pink than any other strawflower color. McKinley estimates that pinks represent about 80% of his total business. The other dominant

group, which he classifies as fall colors (yellow, orange, reddish-brown) are restricted to more seasonal use and with white make up the remainder of his total color-specific sales. He is now concentrating on developing colors in that group, with the goal of becoming completely self-sufficient in the range of colors he sells by the 1985 season.

As successful as he has been, McKinley considers himself an amateur by choice. He is deliberately casual about the setbacks and accomplishments of his breeding and business, claiming no permanent commitment to either. For him, it is a hobby that he can pursue or drop at will. A full-time hobby it is, too. With the help of his wife and two part-time employees, he grows commercial varieties and his own selections of strawflowers in a plot of about 8,000 sq. ft. The commercial varieties are grown from seed; the selections must be propagated and carried over every year. Blue salvia occupies another 700 sq. ft., part of a border originally created to screen the stakes and twine of the strawflower plot. All of those flowers are grown, harvested, wired, dried and sold. In addition to his breeding and business growing, McKinley also cares for the plants and gardens on his four and one-half acre property. Hollies (*Ilex* species and cultivars) are one of his particular interests.

Despite the hard work and year-round demands of his new occupation, Ted McKinley believes he has gained a great deal from it. The satisfaction of developing new strawflower colors, the challenge of producing high quality flowers for sale, and the opportunity to do what he enjoys rank high as rewards. Sue McKinley feels that she too has benefited: she has a colorful variety of choice strawflowers to use in her work, and an interest she shares with her husband. Best of all is what they can enjoy together, an ever-widening circle of acquaintances made through contact with people interested in all aspects of their occupations: breeding, growing, selling and flower arranging.

To send for the one-page catalog, enclose a stamped, self-addressed envelope to:

Barley Mill Bouquet Everlastings
1510 Barley Mill Road
Wilmington, DE 19807

Bonnie Day is a writer and horticultural consultant who lives and gardens in Wilmington, Delaware.



Luring even the most hurried pedestrian off the beaten track is The Granary Walk, which runs along the building's south side, between two major Philadelphia streets. Here Parker removed the asphalt from the old alley's cobblestones and planted flowering trees and annuals selected for close viewing and shallow planting tolerance.

When last we visited Kenneth Parker, an environmental designer known for corporate interiors, he was cultivating everything from bougainvillea to tomatoes to poplars ten stories above Philadelphia's Benjamin Franklin Parkway. That was in 1979, and Parker had made headlines for his novel resuscitation of an old, inner-city granary: striking offices for Kenneth Parker Associates Incorporated at ground level and an even more spectacular, garden-ringed penthouse for the boss 110 feet up, with some 75 empty grain silos in between. (See "Gardens on the Skyline," *Green Scene*, May/June 1979).

Up top, we saw then, Parker had among other things a serpentine lawn, lovely flowering borders and trees that could be seen waving to those of us walking or driving below. Amenities included a morning-glory canopy over a cushioned swing, and removable windows from the greenhouse-style jungle of a bathroom.

As we tune in this year, Parker still has his head in the clouds over gardening. But

wait — he's come down to earth as well. With all Parker's success at what he earlier called, straight-faced, "roof gardening," it evidently just wasn't enough.

Naturally, the 6,200 sq. ft. of skyline evergreens and hibiscus, roses and cacti were left behind every weekday morning when Parker descended from home to office. So he furthered his hobby of "just plain dirt gardening" by creating another 3,000 sq. ft. of exemplary city gardens around The Granary, as Parker's building is called.

Having already landscaped the area closest to the main entrance at 411 North 20th Street, "to extend the reception area," Parker said, he established new gardens along the building's south side. Rudimentary scribbles on the back of a yellow tablet materialized into 30-in. deep railroad-tie planters that hug The Granary's wall and run on past the building to define a long row of parking spaces for Parker's employees and tenants.

"Like a big flower pot" is the way Parker describes these planters constructed on

COMING DOWN TO EARTH:

A City Garden for all Reasons



by Ann Jarmusch



Parker began his ambitious urban landscaping projects with the main entrance to The Granary, where he built railroad-tie planters and filled them and terra cotta pots with common plants suited for city living.

top of asphalt paving he deemed too costly to break up and remove. Instead, drainage holes were drilled in the pavement. The railroad ties were stacked in place, in stepped heights at the front for added visual interest as well as various plant needs. Rubble was then thrown in and the planters filled with good soil. To allow for frost movement, the ties were not bolted to the pavement, only to each other.

Last season was these plantings' second. Matching topiaries rose out of petunias in terra cotta pots flanking a side entrance to the building. Bulbs, and honey locust and weeping cherry trees flowered

In this ongoing project, Parker estimates he's spent approximately \$1,500 on construction materials, \$500 on gardening materials and \$2,500 on plants in the park and in the planters around the base of the building and parking lot.

early, then gave way to jewel-bright annuals such as zinnias, geraniums and marigolds, with impatiens and daylilies beaming in shadier spots. Fall temperatures prompted Parker to put in an array of chrysanthemums and begonias accented by the pyracantha's berries. In winter, the evergreens sparkled with strings of white lights.

Parker explains that he planned this long, narrow swath along The Granary Walk (formerly Shamokin Street) for close viewing by plotting spots of color and keeping plants small in scale. Yes, he considered the charming 19th-century carriage houses lining the other side of the alley and went so far as to have the asphalt removed from the alley's old cobblestones. Likewise, Parker specified natural materials when designing his garden – nothing "so constructed as a masonry wall" would feel right in this scheme, he said.

These plantings are accessible to the public day and night, yet Parker reports no vandalism, no theft, no graffiti. Noting with a smile the police station conveniently located directly across 20th Street, Parker prefers, it seems, to consider the garden untouched because it is appreciated by the neighborhood. "Most high-rise buildings put their plantings away from people, distancing them," he commented quietly. "I think this garden, meant to soften the harsh city environment, is successful at drawing people in."

Those drawn in far enough to admire the grapevine and wisteria climbing the arbor



Topiaries festooned with petunias and marigolds welcome Parker at the side entrance to his home.

between the building and the parking area might also notice a metal staircase leading down to yet another green haven enhanced by Parker. This is what he calls "the park," where the city's hum turns serene.

The park's awkward dimensions – 110 ft. long and widening from 12 ft. to 25 ft. at the far end – challenged Parker to make it a more interesting space. Its natural attributes were a 25-ft. high granite retaining wall, which the staircase scales, and existing stands of trees, their slightly curving trunks already animating the space. Ferns were growing in chinks of the wall here and there, as they must have done for the century or so the wall has stood near the railroad tracks that served the original granary.

Parker has shut out these obsolete tracks with a wooden stockade fence, but their siding is still visible in places near the building. Where the boxcars would have entered the granary, Parker has made an office with sliding glass doors. The man at the desk nodded his agreement when Parker pronounced this office the building's finest for its view. Waving his arm toward forsythia just outside, Parker said, "More businesses should do this, and more office buildings, too. We used a very simple, straightforward approach and readily available materials that are not very costly." In this ongoing project, Parker estimates he's spent approximately \$1,500 on construction materials, \$500 on gardening

photos by Lynn Rosenthal



Several truckloads of dirt were shoveled through the iron fence 25 feet above to make Parker's park possible. Mounds of earth help define the space as well as provide better growing conditions for shrubs and evergreens.

materials and \$2,500 on plants in the park and in the planters around the base of the building and parking lot.

Moving past the forsythia and redwood picnic table just beyond the office, Parker set out on the pebble path lined with cobblestones meant to unify the design of the street-level with this one. The romantic school of garden design may have prompted him to build in what he calls "surprises": a circular clearing is outfitted with cheery yellow and white metal dining furniture and a barbeque grill, and, deeper into the park, the meandering path squeaks between slender ash trunks guarded by a noble stone dog.

Just as he had done with the building's interior, Parker gleefully elevated antique grain processing implements found inside the old granary to "found object" sculpture

continued



The path through the park narrows here and its travelers must squeeze between tree trunks. The park is 110 feet long and from 12 to 25 feet wide, so Parker animated it with romantic design "surprises," like this one.



Densely planted hosta, impatiens and coleus in the park.



Old tools found in The Granary serve as sculptural elements in the park. Parker's design training told him to place this implement in a lily bed where its lines would relate to the wall's mortar and the tree's fork.

status. Today, a weathered wooden barrow adds a touch of authenticity to the park by its seemingly abandoned state along the path and barrels that once contained grain now hold cascading ivy and impatiens in summer.

Architect David Ertz formerly with Parker's firm recalls the first year that Parker began clearing the ground near the building. "Once cobblestones were put in, employees began taking chairs out there for lunch. That first year, flowering shrubs and evergreens were planted," said Ertz.

Two years ago, the project really took off. "Several truckloads of dirt were hand-shoveled through the iron fence [at street level], since there was no driveway to the

lower level," Ertz continued. "Ken had the workers build the soil into a couple of knolls about 3 ft. high to break the park into smaller areas and to create little, enclosed spaces."

Last season, quince and variegated holly were among the shrubs doing well on knolls, while hosta, ivy, coleus and pachysandra covered the ground. Spiraea, lilies and begonias shot color through this sun-dappled allée.

Parker, who employs a full-time gardener to maintain these gardens, the ones at the penthouse level and the plants decorating the offices, estimates the maintenance time for the park and south-facing planters at about 15 hours a week. Gardener Bob

Jordan, new to the position last fall, cited watering as his number one activity and worry, despite an automatic watering system that snakes through the planters. The drainage holes in the asphalt were supplemented by holes in the planters' sides, but summer in the city called for buckets of water.

To the watering problem, Parker added wind, which he's already battled in the penthouse. He purposely selected flexible trees for the south side street-level, where the wind roars through the alley, and is waiting to see how well the honey locust, weeping cherry and Lombardy poplar do there. (Up in the sky, Parker's trees, intended as windbreaks, have thrived to the extent that their weight and wind resistance may force him to replace them with smaller trees.) Plants with taproots failed, so Parker has concentrated on those with fibrous roots. Also dictating his choices is the urban setting that keeps Parker's ground-level plantings in shadow except in high summer.

Jordan will be removing plants that have grown too large for their spots: a rhododendron in a square recess in the arbor is poking out of what now appears to be its cage and may be replaced by a slower growing azalea. The dogwood marking the 19th Street entrance to the daisy-dotted parking bays may have reached its limit in the planter's 30-inch depth. Geraniums initially planted too close to the black watering hose will make way for thirstier plants.

Parker has noticed no ill effects he could attribute to air pollution. Jordan wrestles with the usual spider mites and frets that passersby will come too close to a thorny pyracantha.

What's fascinating is Parker's grafting of his Philadelphia College of Art-trained sense of design with his unbridled love of gardening. Balancing aesthetics and practicality, delight and economy at every turn of the design and maintenance process, Parker triumphs over the typical urban developer's urge to smother the earth in asphalt and concrete. Instead, he chooses to contribute to this mixed residential/commercial section of the city with inspiring blooms and lush foliage usually kept private. Here, no fences, no locked gates, no guards exclude. Parker invites the neighbors to picnic in the park, pedestrians to linger a moment.

Says the designer-host, "I think the impression is welcoming."

•

Ann Jarmusch was publicist for the '78 and '79 Philadelphia Flower Shows. She is a freelance writer and editor specializing in the visual arts.



A summer day's harvest

A LOT FOR LESS: *Intensive Vegetable Gardening*

 by Ernesta D. Ballard

No matter how long you've gardened, there's always something else to try, or different plants to grow. That's the fun of it. I've been through intense phases of house plants, greenhouse plants, rhododendrons, rock gardens, annuals, perennials, hollies, lilies, alpine and bonsai. Still on my prospect list are wildflowers, orchids, daffodils and grasses. Doubtless, others will suggest themselves. Following each of these enthusiasms, I've ended up with a collection of plants that I wouldn't want to live without.

Through all these adventures, I've grown, each summer, six or eight tomato plants and occasionally a few beans or onions. But until two years ago, I never had what could properly be called a vegetable garden. My first one, in the summer of 1983, was rototilled out of a patch of weeds and brambles, and was only fairly satisfactory. I spent most of the summer rooting out goutweed, only to have rabbits nip off the bean seedlings and raccoons eat the best tomatoes and melons. The garden, while only about 1,000 sq. ft., was too big and too much work.

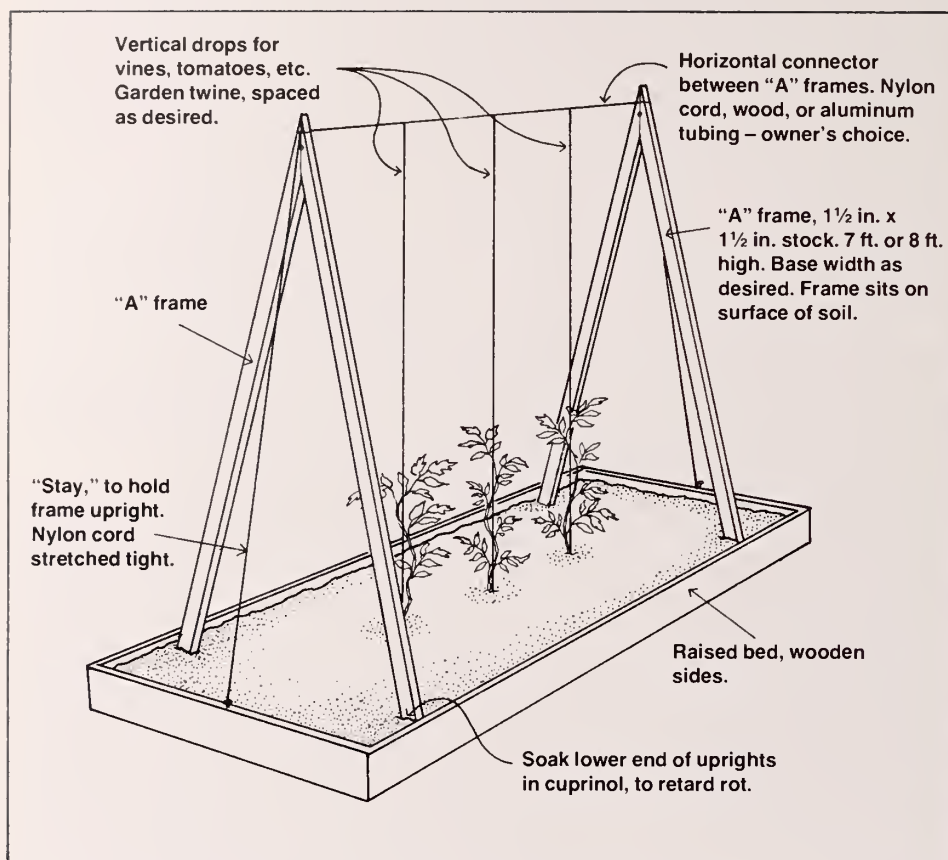
For 1984, I decided to try a much smaller, much more intensive vegetable garden. It was an unqualified success, yielding all

the vegetables two of us could eat from the first of June to Thanksgiving, with Brussels sprouts, carrots, leeks, chard, parsnips and borecole (a kale hybrid) still left to harvest. Once the beds were built and the growing medium in place, there was virtually no hard work and very little weeding. We treated the raised beds like oversized pots and followed the rules for growing plants in containers, filling the beds with the same friable mix we use for potting soil, setting up a handy and reliable irrigation system, and applying fertilizer regularly. The one thing we could use more of is sun. Our garden gets about six hours in May, June, July and August; it should have eight to ten. Nevertheless it produced well, and I recommend this simple plan for experts and beginners alike.

the construction

The first step was to build a barrier against rabbits and raccoons. We decided on post-and-rail, the posts made from pressure treated 2 x 4s and the rails from run-of-the-mill 2 x 3s. We cut holes in the posts, to hold the end of the rails, with an electric drill and a chisel. We set the posts 3 ft. into the ground and 8 ft. apart because that length fit our plan; the top of the rail was set 2 ft. above grade because that is

continued



Tomatoes and beans growing on the A frames.

18

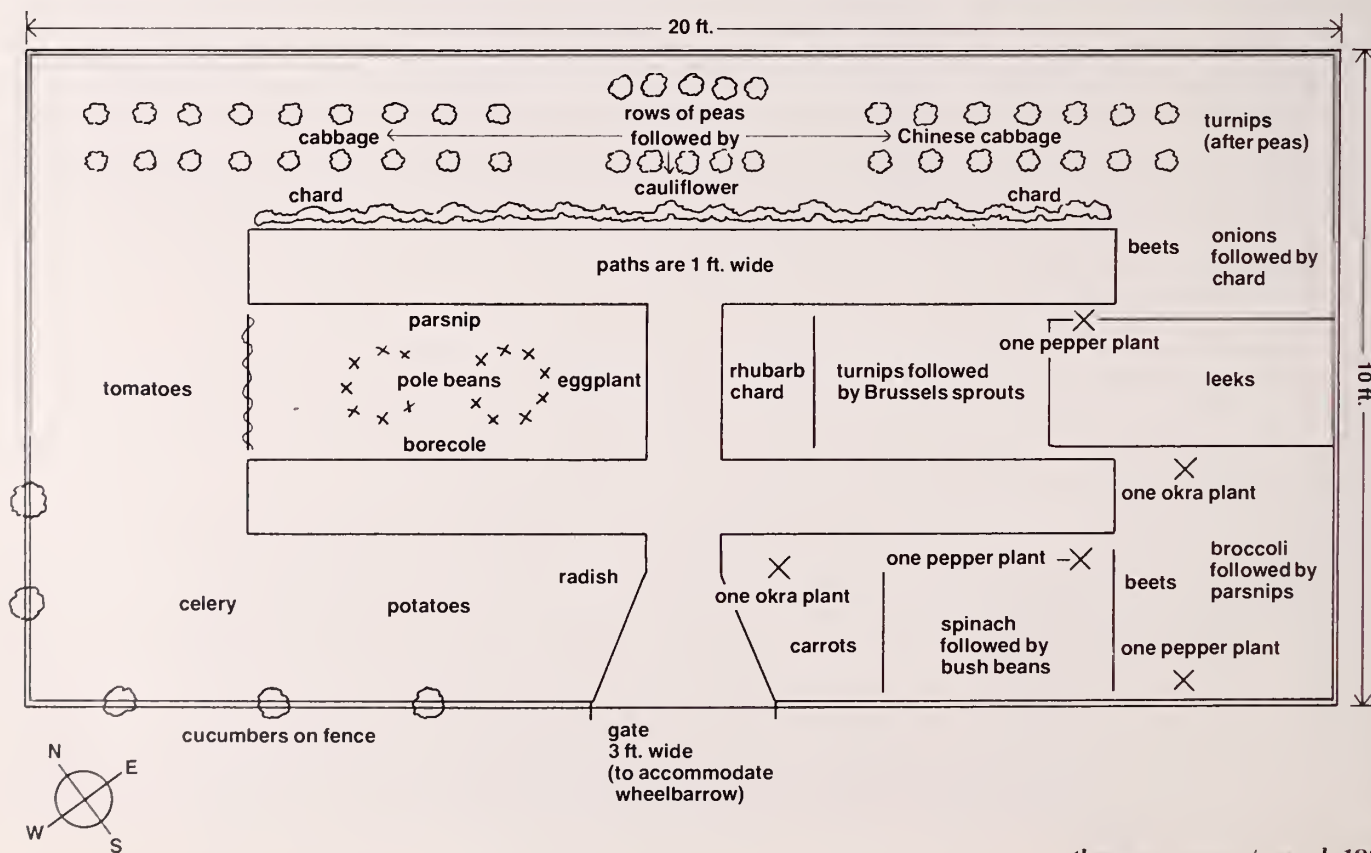




photo by Ernesta Drinker Ballard

the minimum needed to defeat rabbits. We connected the bases of the posts with run-of-the-mill 1 x 10 boards painted with a copper naphthanate preservative. We were afraid to use pressure treated stock because the treatment chemicals are volatile and harmful to plants. We stretched 2-ft. chicken wire (*not* turkey wire) between these boards and the rails, making a neat, rabbit-proof wire fence with a gate that is also rabbit-proof. (We had tried turkey wire but the rabbits were able to run through.) Along the top we ran an electric cattle fence, which quickly won the respect of grandchildren and completely discouraged the raccoons.

We used the 1 x 10s between the posts as the outside edges of our beds and made the interior edges of the same stock, using pressure treated 2 x 4s ripped lengthwise and driven into the ground with a maul as posts to nail them to. The beds are no more than 3 ft. wide so that I can easily reach all parts from the paths without ever stepping on the growing medium. This is of paramount importance; the first rule is, don't step on the beds. The paths are 14 in. wide and paved, as it were, with salt hay to

minimize mud. The finished beds contain carefully tilled soil and compost (mostly compost) to a depth of 18 in.

Before we did any planting we installed an irrigation system connected to a garden spigot. It consisted of lines of perforated hose running along the surface of the beds about 15 in. apart. The system would thoroughly soak the beds in four or five hours. I knew when the job was done because the excess water ran out under the edges of the beds.

The final piece of construction was the support system for pole beans, tomatoes, cucumbers and anything else that needed support. Instead of the conventional poles, which are not easy to install in such a garden, we used A-frames 7 ft. high and just wide enough at the base to fit inside the edges of the bed. To keep them upright, we used stays of nylon cord anchored to holes in edges of the beds. We also ran nylon stays from the top of one frame to the top of another, with drop cords at intervals for the plants to twine around. (See illustration.) This arrangement proved practical and durable, but next year we plan to use wood instead of nylon between the frame

tops, to do away with sagging.

the garden plan

There is lots of room for improvement here. The tomatoes and the pole beans cast shade on the parsnips and cabbage, but both of these grew well in October and November after the tomatoes and beans were pulled out. The Brussels sprouts were much bigger and taller than I expected and needed far larger stakes than I had provided originally. Next year I'll give the potatoes more space and skip the celery, which was small and stringy, despite the late Lois Burpee's instructions about how to grow and "string" it. Since all the books recommend rotating crops, I'll try to do that, to the extent feasible in such a small space.

Tomatoes were grown to single stems, which were twined around strings suspended from the A-frame support system. The two hills of pole beans twined around similar supporting strings. The peas clambered up 3-ft. strips of turkey wire fastened to the fence rails at each end of the bed. They grew so vigorously that we had to install cheap garden edge fencing to keep

continued

Ernesta Ballard's Intensive Vegetable Gardening Schedule

Crop	Source	Date of Planting	Harvest	Comments
Lettuce	Seeds sown every 2 wks. in a container	Set in garden April 1 - Sept. 15	May to November	Will be looking for a crunchier variety next year.
Peas	Seeds	March 17; April 1, 15	June	Plenty, and some for the freezer. May try some in the fall next year.
Radish	Seeds	April - June	May - June	Wormy. Not as good as store-bought.
Spinach	Seeds	April 10, 30	May 15 - June 30	Delicious. Wish it would go on longer.
Okra	Seeds	June 1 (in pots) Set out when big enough to handle	July 20 - Sept. 1	3 plants yielded all I wanted for soups and stews for the whole year.
Turnips	Seeds	May 1	—	Very wormy.
Turnips	Seeds	August 15	Sept. 15 - 30	Picked when small and eaten raw.
Pole Beans	Seeds	June 15	July 25 - Oct. 15	Two hills gave all we could eat and some to freeze.
Bush Beans	Seeds	June 1, 20; July 15	July - Sept.	Neat and compact when grown on 6-in. centers.
Leeks	Seeds	June 1 (in pots) Set out around July 1	Sept. 15 -	Still harvesting at Thanksgiving.
Cucumbers	Seeds	May 1 (indoors)	July 15 - Sept. 15	Grew these on the fence around the garden.
Eggplant	Market pak	June 15	Aug. 15 - Sept. 30	4 plants all we had room for.
Pepper	Seeds	April 15 (indoors) Set out June 1	Aug. 1 - Oct. 20	2 plants provided plenty for us.
Cabbage	Seeds	May 15 (in pots)	August 1 -	3 heads still in garden on Thanksgiving Day.
Beets	Seeds	May 1; June 1; July 15	July 1 - Oct. 15	Tops as good as the beets.
Parsnips	Seeds	July 15 (in flat) Set out Aug. 25	Not yet as of this writing (Dec. 1)	Hoping to harvest these by March 1.
Cauliflower	Seeds	Aug. 1 (in flat)	Oct. 15 - Nov. 10	6 fine plants. Last 4 damaged by frost on Nov. 5 but still tasty.
Brussels Sprouts	Seeds	July 15 (in flat)	Nov. 1 -	5 plants. 4 would be adequate for us.
Carrots	Seeds	July 15	Sept. 1 -	Pelleted seed no better than regular.
Swiss Chard	Seeds	May 10	June 10 - Nov. 15	Our best crop. Same plants produced new leaves throughout the season.
Onions	Sets	May 10	July 1 - Aug. 15	Next year I'll give more space to onions.
Potatoes	Eyes	April 20	July 15 - Sept. 5	Good. Fun.
Tomatoes	Seeds	April 1 (indoors) Set out May 20	Aug. 10 - Oct. 25	The perfect summer vegetable.
Broccoli	Seeds	April 1 (indoors) Set out May 1	June 1 - June 30	Not as big and nice as those in the store. Had to put a net over the plant because the birds ate the heads.
Celery	Market pak	June 1	July - Nov.	Stringy, but o.k. in soup.
Chinese Cabbage	Seeds	Sept. 1	Nov. 30	Most destroyed by slugs.
Borecole	Seeds	July 1	Oct. - Nov.	Leaves good in salad.

them from falling into the path. The same edge fencing came in handy to restrain the bush beans. The pepper plants were tied to stakes that leaned out over the path, using that space to advantage.

The raised beds, the light soil mixture and the very close planting made irrigation necessary every two or three days, if it didn't rain.

outstanding successes

Burpee's rhubarb chard, which I planted directly in the garden in a space 24 in. x 18 in. and thinned to 6-in. centers, provided greens from the original plants from June through November. Another star performer was Kentucky Wonder pole beans. Two hills, one foot apart with six plants in each, provided all the beans we could eat for 2½

months. They are infinitely tastier than bush beans.

problems

Slugs. Enormous and persistent. It was a wet summer, which made this problem worse. In the end, they defeated me. They reduced the Chinese cabbage to balls of lace, most of which I finally pulled out and



Garden in mid-summer: celery, cucumbers, potatoes, okra, bush beans, brussels sprouts, chard and leeks, all compatible in an 8 sq. ft. area. The red handle at the gate separates to break the electrical circuit, allowing the gardener to enter.

threw on the compost heap on October 30, just when the crop should have been coming into its own. They also worked on the cabbage and broccoli. I could find no remedy that was both safe and effective. Slugs on my zinnias died by the dozens when I used metaldehyde bait, but I was reluctant to put any of that near my food crops.

Aphids, potato beetles, whitefly and cabbage worms were controlled with tomato and vegetable dust. Diazinon granules dug into the beds for the late-started turnips and carrots seemed to check the insects that usually ruin those crops.

All in all, the garden was a great addition to my summer fun and a splendid new endeavor for me. I look forward to next year when I'll manage my small plot to give me more peas, more spinach, more potatoes and more eggplants, my favorites.

Ernesta D. Ballard directed the Society from 1963 to 1981. She is author of *Garden in Your House*, published by Harper & Row 1958 and updated in 1971; it was later published in paperback as *Growing Plants Indoors*; *A Garden in Your House* by Barnes and Noble. Her second book, *The Art of Training Plants*, was published by Harper & Row in 1962 and published in paperback by Barnes and Noble in 1974. In 1972 she won the runner-up sweepstakes award in the horticultural classes at the Philadelphia Flower Show.



Garden on November 20. Parsnips, cabbage, chard and borecole (a kale hybrid) were harvested through the winter. Note irrigation system and raised beds.

A well pea-staked mass of *Helenium autumnale* 'Riverton Beauty' in May. When covered the sticks will provide perfect support throughout the season.



The Art of Pea-Staking Perennials

 by Charles O. Cresson



22 Coral bells (*Heuchera*) staked with birch twigs in the author's garden. In the background gooseneck (*Lysinachia clethroides*), and Mahogany bee balm (*Mondarda didyma* 'Mahogany') have also been pea-staked.

The backbone of many grand English perennial borders is the pea-stick. Staking perennials with pea-sticks is a method so effective that nothing short of a hurricane could knock them over. They may have their tops broken off but they won't fall over. In addition, they look completely natural.

The secret to this backbone is that the plants are supported evenly from within, all through the clumps from top to bottom. A network of branches and twigs, hidden by the foliage, holds the stems in the exact position that they have grown. This prevents them from sagging or flopping over as so often happens just as they are coming into bloom. A well pea-staked flower border never has loose, open clumps of perennials where the stems have separated.

I was first exposed to the idea of using tree branches to support flowers in the American garden of an "enlightened" friend. He had placed some branches around a clump of lilies to hold them up and explained that "this is what the English do." Well, it isn't at all. The lilies looked awful growing out of this thicket of dead wood, and I will never forget the impression it left upon me.



Artemisia 'Silver Queen' with pea-sticks in May. Soon it will cover the sticks and remain a perfect mass of grey foliage all summer.

photos by Charles O. Cresson

My next experience with pea-staking was to learn from the masters themselves – the English. While working for the Royal Horticultural Society at Wisley Garden I was assigned to the great perennial borders along the 400-foot-long Broad Walk. These borders on either side of the wide grass path are 18 feet deep. It was spring and two of us worked for nearly two months preparing and pea-staking these borders for the coming growing season. The experience sold me on pea-staking, and I have been using the technique here in my Swarthmore, Pennsylvania garden ever since.

Pea-sticks, by the way, originated in the vegetable garden where they are used to support pea vines.

Probably the greatest difficulty for American gardeners wishing to use this simple technique is locating suitable branches for staking. They should have a three dimensional branching habit so that there are many twigs on all sides. They must also be strong enough to hold up after they are dead. Some types of trees or shrubs such as privet or linden become too brittle. At Wisley we used cut alder (*Alnus*) six or seven feet long, which could be cut up as needed. It was perfect because of its dense, upright branching habit, and although dead was quite durable.

In my garden without a source of alder I've had to improvise. Nothing is pruned without the thought of its possibilities for pea-staking. I even watch the activities of neighbors and offer to take their prunings off their hands. There are many reasonable substitutes such as birch, pin oak, and buddleia. Vitex is especially convenient because it is strong and dies to the ground in our climate every year anyway. If good pea-sticks are hard to come by, they can be reused for a number of years.

Staking with pea-sticks is most easily done in the spring when the perennials are about 6 in. tall. The sticks should be placed

in the middle as well as around the sides so that the perennials will grow up through them and cover them with foliage. Push three sticks into the soil around the sides of each clump so that they cross through and support the middle shoot also. The perennials will grow up between the sticks and cover them with foliage. To provide good support and still be hidden, the sticks should be 6 in. shorter than the foliated

Staking perennials with pea-sticks is a method so effective that nothing short of a hurricane could knock them over.

part of the plant. The gardener should be able to envision how things will look in flower to do the job properly.

Ideally, once done no further support is required for the rest of the season. But I cheat a bit and run a piece of green twine around each group to catch renegade shoots before they get away. The purist would not approve.

At Wisley we had a little red book for the borders that listed every variety, told whether staking was necessary, and how tall they should be. This single edition was like a mini-encyclopedia. Heaven help the student who misplaced it!

Well-placed pea sticks can be a work of art in themselves. When properly done, one can almost visualize the heights and arrangement of plants within the beds. With the rapid growth of perennials in late spring, however, it is not long until they are hidden. Coverage should be complete by early June and the odd twig still visible can then be trimmed away.

Pea-staking can also be done later in the season but with greater difficulty since the tall brittle shoots often must be positioned within the twigs rather than growing into them. Actually I prefer not to do this job until after the tulips have finished blooming, and although this complicates matters, it

seems worth it not to look at the twigs until then.

when not to use pea-staking

Pea-sticks are not for every perennial. Generally those with sparse or low foliage cannot disguise the sticks and some perennials simply don't need support. They are also more effective on perennials planted in masses since the whole planting can be held together as a single entity.

An exception to the exclusion of plants with sparse or low foliage is when the texture of the pea-sticks can be blended with that of the perennial. Coral bells (*Heuchera*), for example, have low leaves and long flower stems. I have a variety that has such tall stems that they always fall over. Birch twigs are the same thickness as the coral bell stems and blend in so well that they get lost in the confusion while they do their job.

Of course, there are alternatives to pea-staking. Other methods of staking can be used but often the effect is not so natural looking. With some varieties pinching will encourage more compact plants that will stand on their own. If I can think of it at the right time that is often an easier solution. Avoiding excessive fertility often means avoiding the need to stake. If you can limit yourself you can simply use only those varieties that do not generally need support.

In spite of careful planning and care, something in my borders always seems to need staking. And then there is the sudden storm that wreaks havoc on a flower bed unexpectedly. But at least I can feel at ease about my perennials that have been pea-staked. No mere storm will knock them over.

Charles O. Cresson is a professional horticulturist, gardens in Swarthmore and lectures on perennials and bulbs. He is employed by Meadowbrook Farm near Jenkintown where he has planted a perennial border, which is open to the public.

Editor's note: We became interested in the subject of pea-staking a year ago when we received a brief tip about "twiggy brush" from Charles Becker, Jr., a gardener in Haverford. It was Cresson who told us that "twiggy brush" was another name for pea-staking. Becker listed some of the plants he uses for "twiggy brush":

Cut when all of the leaves are removed:
hemlock and azalea

Cut when the leaves fall: birch, buddleia,
hornbeam, alder, poplar

The author's fertile soil requires pea-staking for these perennials:

Aster novae-angliae 'Harrington's
Pink' and 'Mount Everest'
Campanula sp.
Crocasmia x crocosmiiflora
Echinops 'Taplow Blue'
Gypsophila paniculata
Lychnis chalconica
Lysimachia clethroides
Lythrum salicaria
Monarda didyma
Solidago 'Goldenmosa'
Valeriana officinalis

New England aster
campanula
crocasmia
globe thistle
baby's-breath
maltese-cross
gooseneck
purple loosestrife
bee balm
hybrid goldenrod
garden heliotrope

CRESSON ON GARDENING

PHS members can hear Charles Cresson talk about "Discovering Perennials for Informal Gardens" at PHS on April 4. Also PHS members can visit Cresson's Swarthmore garden on April 24 as part of a PHS planned field trip, "A Day in Swarthmore." Complete details, time and cost, for both events will be listed in the March and April PHS News.

Raising Distinctive Daffodils



by Betty Pease Krahmer

At our house in the spring, dinner guests often reach to turn the centerpiece. I consider this a great compliment. They are intrigued with the unique quality of the daffodils in the arrangement. At times I mix a riot of colors, reds, oranges, yellows and whites; sometimes the arrangement will be limited in color, perhaps pink and white. The interest, however, will still be there in the contrast of shapes from regal trumpets to small cyclamineus with flyaway petals.

My garden delights me with daffodil bloom for at least six weeks. By carefully selecting varieties from different divisions anyone can have a long season of glorious bloom. Many of the desired varieties are recent introductions, but some of the older ones are so noteworthy they deserve a space in the garden. In almost every instance the more unusual daffodils are no more difficult to raise than the old garden favorites.

distinctive attributes

Many of the newer varieties have such distinctive attributes that the purchase of a few will lead a gardener to want more. The form of most new varieties is much improved with flat, often overlapping petals, and coronas extending at right angles to the perianths in a straight pipe-like fashion. The texture can have a satiny smoothness which, particularly in the whites, glistens. If you hold some of the newer blooms to the light you will see the substance is thick and almost opaque.

Daffodil yellow can now mean a pale buff, lemon or even rich Aztec gold. Some of the pink cups are a deep rose color. This contrast with pure white petals gives a crisp spring appearance. Some cups have more than one color. Some coronas are rimmed or even completely colored with bright oranges and reds. These are found with both white or yellow petals. The occasional smearing of the cup color onto the perianth points the way to development of all pink and all red daffodils in the future. There are cups that bloom yellow, then change to white or pink.

Six Weeks of Bloom for New Daffodil Varieties

Very early bloom from March 10th (primarily the cyclamineus)

Daffodil	Division Number	Perianth Color	Corona Colors from the Perianth Out
Jetfire	6	Yellow	Red
Surfside	6	White	Yellow
Charity May	6	Yellow	Yellow

Early bloom (primarily trumpets and long cup)

Inca Gold	1	Yellow	Yellow
Arkle	1	Yellow	Yellow
Glenfarclas	1	Yellow	Orange
Euphony	2	Yellow	Yellow
Ginger	2	Yellow	Yellow
Loch Hope	2	Yellow	Red
Flaming Meteor	2	Yellow	Red
Copperfield	2	Yellow	Yellow
Foundling	6	White	Pink

Midseason bloom (the bulk of the blooms)

Chiloquin	1	Yellow	White
Big John	1	Yellow	White
Ulster Queen	1	White	White
Panache	1	White	White
Nutmeg	2	White	Yellow
Highland Wedding	2	White	White/White/Pink
Homestead	2	White	White
Broomhill	2	White	White
Serape	3	Yellow	Yellow/Orange
Achduart	3	Yellow	Red
Acropolis	4	White	White/White/Red
Tahiti	4	Yellow	Red
Tonga	4	Yellow	Red
Jovial	5	Yellow	Orange
Tuesdays Child	5	White	Yellow
Lapwing	5	White	Yellow
Stratosphere	7	Yellow	Orange
Sweetness	7	Yellow	Yellow
Well Worth	7	Yellow	Yellow

Late bloom (primarily white perianths)

Rockall	3	White	Red
Merlin	3	White	Yellow/Yellow/Red
Park Springs	3	White	White/White/Yellow
Waxwing	5	White	White
Eland	7	White	White
Dainty Miss	7	White	Green/White/White
Hoopoe	8	Yellow	Orange
Avalanche	8	White	Yellow
Scarlet Gem	8	Yellow	Red

Very late bloom (poeticus)

Sea Green	9	White	Green/Green/Red
Angel Eyes	9	White	Green/Green/Red



Acropolis



Euphony

photos by Betty Pease Kraemer

getting as much as possible from bulbs

The expense (from \$1.00 to over \$100.00) of many of these more interesting daffodils makes it imperative to plan one's daffodil garden. Most amateur daffodil growers start out buying only one bulb of a variety. At present, there are some 500 varieties in my garden, not an excessive number among serious amateur growers. Very rarely have I purchased more than one bulb of a variety. Let good habits of culture and periodic digging and separating increase the number of each variety.

In addition to expense, planning is important because certain types want a bit more coddling. Red cups tend to "burn" in the sun, which makes their edges crisp. In that case, pick as soon as they open or cover with a small basket until they fully open. Setting up burlap baffles as temporary wind barriers against our strong spring northwest wind is a good idea. From the time the foliage pushes itself through the ground, the bulbs demand moisture. Plenty of water on the double daffodils will help prevent bud blasting.

Sometimes the blooms won't open when

continued



Stratosphere



Foundling



Jetfire

photos by Betty Pease Krahmer

we want them to. A bud can be encouraged to open by plunging the cut stem into very hot water, placing it in high humidity (such as a supported plastic bag with the interior sprayed with water), and setting it under a strong light. But remember, flowers can burn under artificial heat and light as well as under natural light.

Conversely, one can "hold" daffodil blooms for as long as 10 days. After keeping the cut stems in hot water for at least half an hour, put the stems in a couple of inches of water and place in a refrigerator. A non-self-defrosting is preferred, but in any case, the flowers should be misted daily. When needed, recut the stems and place in water with commercial flower pre-

servative or sugar. At best, daffodils last in arrangements only a few days, and those that have been refrigerated rather less time.

try distinctive daffodils

The daffodils listed on the blooming chart were selected on the basis of availability as well as desirability. Of course, there are many, many others that are equally fine. The time to order these daffodils is before the first of July. When packing their shipments in the late summer, commercial growers fill requests in order of their arrival. The finest plump bulbs go first.

Some of these special daffodils deserve to be in every spring garden. Beware, they are addicting.

The American Daffodil Society will hold its Annual Meeting and National Show at the Holiday Inn of Valley Forge in King of Prussia, Pa. The show times are Thursday, April 25 from 2 pm to 9 pm. On Friday, April 26, the hours are 9 am to 5 pm.

Sources

The Daffodil Mart
Rt. 3, Box 208 R
Gloucester, VA 23061
Murray W. Evans
3500 S.E. Manthey Road
Corbett, OR 97019
Hatfield Gardens
22799 Ringgold Southern Road
Stoutsville, OH 43154
Mr. & Mrs. R. D. Havens
P.O. Box 218
Hubbard, OR 97032

Daffodil Classification by Division

Division No.	Name	Definition
1	Trumpet	Corona as long or longer than the perianth. One flower to a stem.
2	Long Cup	Corona length more than $\frac{1}{3}$ but less than equal perianth. One flower to stem.
3	Short Cup	Corona length not more than $\frac{1}{3}$ of perianth. One flower to stem.
4	Double	Added perianth segments or filled corona or both. One flower or more at stem. Often odoriferous.
5	Triandrus	One or more bell-like pendulous flowers to stem. Perianth reflexed.
6	Cyclamineus	Corona usually long. Perianth sharply reflexed. One flower to stem.
7	Jonquilla	Flat perianth. Usually several flowers to stem. Sweet smelling.
8	Tazetta	Small corona. Rounded flat perianth, often crinkled. Two or more clustered flowers.
9	Poeticus	White perianth, small corona which may include yellow, orange, red, green. One flower to stem.
10	Species	Wild forms and wild hybrids. Presumed to have originated in the wild rather than a garden.
11	Split Corona	Corona split at least $\frac{1}{3}$ of its length. One flower to stem.
12	Miscellaneous	All which are not included in other divisions. Very few.

Bulb Planting & Care

Plant:

From late September through fall.
In well drained loamy soil.
Away from heavy shade.
In soil worked deeply.
At depth three times height of bulb.
With 6 to 8 in. apart.
Using low nitrogen fertilizer 1 in. below bulb.
After dusting basal plate with benlate or cap-tan (fungicides).

Care:

When flower size decreases and foliage increases, it's time to lift and to divide the bulbs.
Lift only after foliage dies back (wait at least six weeks).
Wash away dirt.
Soak in benlate solution within 24 hours of digging.
Store in net bags and hang in a well ventilated area until fall.

Betty Krahmer gardens in Wilmington, Delaware. She is a regional vice president of the American Daffodil Society, a director of the Wilmington Garden Center, and co-editor of *The Gardener's Diary & Organizer*.

Growing Orchids in the Windows



by Jerry Medeiros



Near a window a specimen size cymbidium dominates the scene.

For years, orchids have taken a bad rap for being too exacting, demanding and exotic for the average grower to successfully grow and flower in the home.

This, in part, is because the only orchid many people ever saw was a cut flower or corsage from the local florist or displays in public or private conservatories. Therefore, the orchid was considered a plant for the elite and the average person felt shut out from the orchid world.

Within the last ten years, however, supply, interest and demand for orchid plants

have soared. Memberships in various orchid societies are growing at a brisk pace.

If most people remembered that many of their successfully grown house plants are tropical in origin, they'd realize they could successfully grow orchids too.

It seems incredible, but the family Orchidaceae contains over 50,000 known species and another 50,000 hybrids and intergeneric crosses. It is the largest floral family in the world. Orchids are found in different habitats all over the earth, from jungles

to sand dunes, to regions above the Arctic Circle, from sea level to lofty peaks of 14,000 feet.

Today, with advanced plant breeding techniques and selective hybridization, we are seeing many new orchids that are more tolerant of conditions than were their ancestors.

I have been growing orchids in windows for seven years now. Starting originally with cymbidiums, my collection now includes cattleyas, oncidiums, brassias, odontoglossums, paphiopedilums, dendrobiums and phalaenopsis.

In my living room a nine-foot sliding glass door faces east. I have installed there

Miniature cymbidiums are more tolerant of home conditions than are the standard type.

a metal pipe from which hangs 40 assorted orchid plants. One thing I have found is that various species of orchids will adapt to the conditions that necessity supplies and will co-exist and flourish together.

But some orchids are more difficult to raise indoors than others. For example, spring-blooming cattleyas are especially difficult because it is hard to provide them with enough light to set buds in their sheaths, once formed. The fall-blooming cattleyas, however, will readily bloom indoors from October to January, if they have summered outside. Intense summer light initiates bud formation. If you bring the plants inside in late September or before frost, you have an excellent chance that the orchids will flower before Christmas.

Cymbidiums are also difficult inside. They require a cool night temperature of around 55°F and high light intensity. I have had problems of bud drop when tempera-

continued



A specimen size plant of 'Pat Nixon' cymbidium in fall bloom.

tures fluctuate and humidity is inadequate.

I have overcome these problems by setting the plants in large gravel-filled pans with the water level below the bottom of the pot to discourage root and potting mix decay. Misting, especially when in spike, has proven beneficial. To obtain an even cooler temperature, I placed the plants behind a curtain, which seems to allow less heat through to the plants. Cymbidiums can tolerate drops in temperature more easily than they can stand rapid rises in heat. Also, it seems that miniature cymbidiums are more tolerant of home conditions than are the standard type.

I find, as many home growers do, that the phalaenopsis and the paphiopedilums are the easiest to grow and flower indoors.

Phalaenopsis and paphiopedilums come in a great number of hybrids and species. This is fortunate for the home grower as it affords a wide variety of choices regarding form and color.

light

Phalaenopsis and paphiopedilums do not require as high a light intensity to bloom as do the cymbidiums and cattleyas. Paphiopedilum or lady-slipper orchids are Asiatic in origin and are terrestrial or earth-dwelling plants. These orchids require indirect sunlight except for the direct sun of very early morning. They can be placed behind a sheer curtain for filtered sunlight.

The phalaenopsis, or moth-orchid comes in many colors from white to near red, in stripes, polka-dots or multi-colored. They come mostly from the areas of tropical Malaysia, Indonesia and the Philippines. They grow high up in the trees and are epiphytic. These orchids prefer semi-shaded conditions on a bright windowsill. Never place in direct sunlight as their leaves burn very easily.

temperatures

Ideal temperatures for the paphiopedi-

lums are a day temperature of 70° to 80°F and can go above that for brief periods. A night temperature of 60°F is ideal but they will tolerate up to 65°F. The natural temperature drop of 20° in spring and fall will initiate flower bud formation. Flowers will last a month or more on the plant.

Phalaenopsis orchids like a day temperature of 70°-80°F. A night temperature of 62°-70°F is perfect. Like the paphiopedilums, a drop in temperature in the fall to

Various species of orchids will adapt to the conditions that necessity supplies and will co-exist and flourish together.

60°F for 7-10 days is crucial for flower formation. This can be accomplished by setting plants near an open window of moving plants to a cool porch before fall or winter heat is turned on. Flowers can last up to three months on the plant.

watering

Watering for the paphiopedilums and phalaenopsis is the same: keep moist at all times, but don't soak. Let the plants almost dry off between waterings. Do not let water sit in the crown of the phalaenopsis or on forming buds of the paphiopedilums overnight as this could cause bacterial growth and rot. Also, water early in the day so the plants will be dry by nightfall.

fertilizing

Fertilize on a regular basis using 30-10-10 once a month full strength or twice a month with one-half strength. I substitute a soluble fertilizer low in nitrogen (5-15-5) from the middle of March until the end of August. I find that this slows the vegetative growth and boosts flower production. Remember to flush plants with water between feedings to inhibit build up of chemical salts.

EASY TO GROW ORCHIDS FOR THE BEGINNER

	for a warm location (60° - 68°)	for a cool location (55° - 60°)	for full sun	for a shaded window
<i>Brassavola nodosa</i>			X	
<i>Brassia caudata</i>	X		X	
<i>Catasetum scurra</i>				
<i>Cattleya</i> spp.	X			
<i>Coelogyne cristata</i>	X			X
<i>Cymbidium</i> spp.		X		
<i>Dendrobium nobile</i> and hybrids				
<i>Lycaste aromatica</i>				
<i>Miltonia</i> spp.		X		
<i>Odontoglossum</i> spp.		X		X
<i>Oncidium</i> spp.	X		X	
<i>Paphiopedilum</i> spp.		X		X
<i>Phalaenopsis</i> spp.	X			X
<i>Stanhopea</i> spp.	X			X
<i>Vanda</i> spp.	X		X	

Average home temperatures of 56° - 62°F at night in winter, and 62° - 80°F during the day, will suit most orchids. However, many orchids prove adaptable, and it is an easy matter to place cooler growers closer to the window where temperature is lower in winter, or warmer growers back from the window where temperature is higher.



Jerry Medeiros won the ribbon for best cymbidium and best amateur-grown plant in the 1984 Flower Show. It was the first time Medeiros ever entered an orchid in a show. The plant has eight spikes and 138 flowers.



Odontoglossum crispum

repotting

I usually repot every two years. I know it's time to repot when aerial roots are prolific and hang down on a potted phalaenopsis or if the plant seems to be out of proportion to its container.

When paphiopedilums' new growths are to within one-quarter inch from the pot walls or if the potting medium has turned soggy, it's necessary to repot. The potting mix for orchids contains no soil; it contains fir bark, perlite, hard-wood, charcoal and sometimes shredded redwood fiber. Never repot into a growing medium containing standard potting mix.

disease and pests

Fortunately, disease and pests are not often serious problems with orchids. Mealy bug, scale, red spider and fungal disease are the main concerns. It is rare to find more than one of these irksome pests active at the same time. All are easily contained by malathion or kelthane for red spider and Ban-Rot for fungal problems. Mix according to manufacturer's directions and spray in a fine mist covering all parts of the plants including under the leaves.

The challenge to grow prize-winning orchids in our homes can be met. I can safely say that the most beautiful specimen plants are often grown by amateur window-sill growers who are able to give more time and care to individual plants than is the professional who must spread his time equally on many.

Jerry Medeiros is the greenhouse manager of Plume Orchids in Maple Glen, Pa. He holds a B.A. from the University of California and an A.S. in horticulture from Temple University, Ambler Campus.

Letters to the Editor

garden invaders: horrid chickens et al

Dear Editor:

I enclose a heart-rending reflection on horticulture that might catch the fancy of readers of *Green Scene*.

Yours in our common struggle with the Thumb to make it Green,

Gilliat G. Schroeder
Wawa, PA

Gardening in Central City Philadelphia

Excerpt from a letter dated March 18, 1828, from Mrs. Benjamin Wood Richards (nee Sarah Ann Lippincott) to her husband, then member of the Legislature in Harrisburg. One year later he was mayor of Philadelphia.

"O what a deal of trouble, and worryment, your horrid chickens have given me. I have wished all their necks wrung a hundred times. They have scratched up some of my beautiful flowers, busied themselves among my hyacinths and polyanthus and made their nests among tulips and anemones. I can bear it no longer, what with Cats, Chickens, and Guineahens we are fairly overrun, and I am determined to get clear of them. I sent yesterday the white banty to Jos, put the rest of the chickens in the cellar to fatten and drowned a cat, and just when I thought my work completed, and every nuisance cleared out, I looked in the garden and there I saw right in the midst of my choicest plants three great cats and two of Mrs. Waters' chickens, all hard at work scratching as hard as they could."



photo by F. J. Strawbridge

Am I Blue? Or green around the petals?

This Pine Barren gentian is really blue, and you'd be green around the petals if someone in the pressroom had switched your negatives in the stripping process. That's why the gentian appeared green instead of blue on page 26 of the January issue of *Green Scene*. Now all you gentian watchers can relax; no new discovery has popped up in the Pine Barrens. *The Editor*

the plant finder



A free service for *Green Scene* readers

If you can't locate a much wanted plant send your name and address (include zip), the botanical and common name of the plant to Plant Finder, *Green Scene*, PHS, 325 Walnut St., Philadelphia, PA 19106. People who have the plants or seeds you want will contact you to make arrangements about selling or giving them away, mailing, etc.

WANTED

Dicksonia antarctica (Tasmanian tree-fern)

Contact: Mark H. Hudson, 301 State Road, Princeton, NJ 08540-1405



A Subscription to *The Green Scene* –
(published bimonthly)

A Gift For The Plant Lover

Give a Subscription to your family or friends. A BARGAIN AT \$8.50.

SEND SUBSCRIPTION TO:

FROM:

**Return check and coupon to *Green Scene*, PHS,
325 Walnut Street, Phila. 19106**

Beautifying Narberth Train Station

 by J. Jeffries Eyester

Volunteers from Narberth, Pennsylvania, have transformed six neglected land parcels near its commuter railroad station into attractive gardens and have landscaped its business district, making the small community-spirited borough the garden spot of the Main Line.

I'm telling you about our experience in organizing and coordinating these efforts with the hope that it might encourage people to take another look at neglected sections in their communities.

The project started in 1967 when a group of residents interested in beautifying Narberth and in encouraging neighbors and merchants to keep the town clean and attractive, organized Narberth Improvement and Clean-Up Endeavor (NICE). After a hopeful beginning, however, the efforts of NICE dwindled in the early 1970s until its activity was almost nonexistent.

getting started again

Back in 1974 when I was commuting by train to my job in Philadelphia, I was appalled at the proliferation of cans, bottles, cigarette packs, candy wrappers, newspapers, knee-high weeds and rampant vines around the train station.

I had lived in Narberth, a pleasant small town community, since 1945 and had participated in the community's diverse church and school activities. The one

Last year a woman stopped by, while I was working in this garden, to tell me that her dog had recently died and that she wanted to have a dogwood tree planted in its memory. No sooner had that request been satisfied, than a gentleman asked to have a pussy willow planted in memory of his recently deceased cat. Of course, we complied.

startling deficiency in our community was the lack of natural beauty, especially near the train station. That really bothered me, so I set to work several Saturday mornings each month on a small section known as Station Circle (see A on the map) to improve, even in a minor way, this community eyesore. Volunteers and funds to finance improvements were scarce.

After working alone for almost two years,

the green scene / march 1985



photo by C. Wallace Kunkel

The first gardening was done here. The author (in shorts) joins Mary Jane Cobbs and Spencer Downing.

I noticed that frequently an elderly, heavy-set, pleasant-looking gentleman watched me while I was weeding. When I asked him if he would like to help, he cheerfully agreed. My first recruit, and constant mainstay, was Connie Dydynsky, a retired civil engineer, who happened to be a knowledgeable gardener. Over the next six years, his planning ability, enthusiasm and vision were the key elements needed to move us from a struggling two-person effort to a coordinated, well-organized effort that includes many community-spirited residents. What and how we accomplished these results is discussed here.

the garden layout

Station Circle (see "A" on map) – Stage One

Our first efforts were directed to this area, consisting of a semi-circular plot that serves as a traffic island. A large locust tree in the center is surrounded by yews, two boxwoods, and two spruce trees. In spring, flower boxes filled with red geraniums,

white petunias and vinca vines line the straight side of the semi-circle. These annuals are replaced with yellow chrysanthemums in the fall. Yellow and orange marigolds line the rounded side. During the December holiday season more than 1,000 lights bedeck the locust tree, red bows are fastened to the spruce trees and a "Season's Greetings" sign is placed in this area.

Three small memorial plots adjacent to the One Station Circle building are planted with aucuba, ilex, laurel and yews. The former taxi stand plot contains yews, ilex, azaleas, lilies of the valley, chrysanthemums, rhododendrons, dogwood and many annuals, including Martha Washington geraniums, petunias, vinca and coxcomb.

North Side of Station (see "B" on map) – Stage Two

This plot, approximately 500 ft. long, extends from the station eastward to the bridge over the railroad tracks at North Narberth Avenue. We placed railroad ties in a position to support many square yards

continued



Narberth volunteers Mary Jane Cobbs and Spencer Downing in the garden on the south side of the station; the author in plaid shirt.

of topsoil and mushroom soil needed to establish a successful garden.

On a vacation spent hiking in Switzerland and Austria I noticed flower boxes at many railroad stations. I thought they'd look nice in Narberth, and when I returned, I began to work on it. A local merchant, Ray Benner of Mapes 5 & 10, supplied 12 large redwood flower boxes, approximately 4 ft. x 1 ft. x 1 ft. A neighbor fabricated and installed aluminum brackets on the boxes so that they could be hung from the railings along the train platform on both sides of the station. We added legs to support the weight. The Penn Valley Garden Club planted red geraniums, white petunias and green vinca vines. These flowers are replaced by chrysanthemums in fall.

Six half barrels filled with yellow and orange marigolds grace the train platform. Behind the barrels five yews are planted on the platform. Six pyracanthas behind the yews climb the station office building.

The following shrubs and trees are planted along this north side plot: arbor-

vitae, azalea, dogwood, forsythia, holly, Lombardy poplar, maple, privet hedge, pyracantha and yew. Interspersed among the bushes and trees are hundreds of annuals and perennials.

Mellon Bank Plot (Mellon Patch) (see "C" on map) – Stage Three

This garden, about 50 ft. x 50 ft., directly across the street from the Narberth branch of the Mellon Bank, between Haverford Avenue and the railroad, contains a selection of shrubs and perennials.

South Side of Station (see "D" on map) – Stage Four

We started work on this area about three years ago, immediately after a new railroad station building was built by SEPTA (South-eastern Pennsylvania Transportation Authority) on the south side of the railroad tracks. The entire area was almost bare of landscaping because the parking lot and station building were rearranged.

We removed stones and debris and

hauled in many cubic yards of topsoil and mushroom soil to cover the clay soil.

The garden area consists of an island in the center of the parking lot and gardens on both sides of the walkway leading from Elmwood Avenue to the train station. A small garden is also located at the entrance to the parking lot. The landscaping covers an area about 600 ft. long, varying in width from about 25 ft. to 125 ft.

Wynnewood Avenue Tunnel (see "E" on map) – Stage Five

This irregular parcel about 50 ft. x 100 ft. at the foot of Haverford Avenue and Wynnewood Avenue was completely transformed. The garden covers both entrances to the tunnel and extends eastward from Wynnewood Avenue along Haverford Avenue.

After cleaning up these grounds, railroad ties and many yards of fill soil and mushroom soil were added before landscaping could start.

Last year a woman stopped by while I was working in this garden, to tell me that



her dog had recently died and that she wanted to have a dogwood tree planted in its memory. No sooner had that request been satisfied, than a gentleman asked to have a pussy willow planted in memory of his recently deceased cat. Of course, we complied. Later a local boy scout, working on his Eagle Badge, created a walkway into the garden and installed a bench for those who would like to sit and relax.

Playground Garden (see "F" on map) – Stage Six

This area, approximately 200 ft. long x 50 ft. wide, was once a dump. We cleaned it up, graded it and prepared it for planting. Railroad ties outline the roadside edge. Pachysandra, Japanese holly, spider plants, lilies, ferns, coleus and white pines have been added. Work on this area has not yet been completed.

The Business Area (see "G" on map) – Stage Seven

Improvements by NICE have been made

along the main business streets of Haverford Avenue and North Narberth Avenue:

- 39 half barrels containing arborvitae, placed along the sidewalk.
- 24 locust trees, selected because they are hardy and the foliage is not dense, allowing pedestrians an unobstructed view of the merchants' windows, were planted in the sidewalk area.
- 12 attractive trash containers line the pavements. Donor organizations are named on the receptacles in appreciation of their generosity.

community support

The success of our efforts are dependent upon volunteer workers and financial support.

Workers

Over a period of time some people have liked what we've done and have become interested enough to assist. Several of them call once a week to ask what they can do to help.

A watering schedule has been set up to cover some of the gardens for each day of the week. Volunteers are assigned each day of the week at different gardens.

The work is somewhat seasonal. From April to October we put in about 120 volunteer hours a week. From November to March we spend about 20 hours a week.

A wonderful arrangement was worked out with the local District Justice who now assigns young persons working off fines for misdemeanors to help us. The arrangement is good for us and for them, because they like the work and take pride in the results. Forty-seven boys and one girl have worked with us to date. Some have returned as volunteers.

We prepare a schedule outlining monthly tasks so that the work is spread out as much as possible over the year; e.g., letters requesting contributions are prepared in January and mailed out early in March.

A breakdown of time spent is approximately as follows:

	Percentage
Weeding	30
Watering	30
Tilling	10
Fertilizing	5
Trimming	5
Planning	5
Raising funds	5
Miscellaneous	10

Suggestions for Starting a Train Station Beautification Program

Organize. It starts with one person with a strong interest. That person should interest one or two others. You need more ideas, more help and varied talent.

Start small. Pick a small plot that looks disastrous and that is prominent. Any improvement will be noticeable and instant recognition will make it easier to enlist workers and donations. People will respond if they like what they see.

Annual plan. Determine what you intend to accomplish the first year. Make up an activity schedule to show what should be done such as cleaning up, weeding, preparing soil, planting, tilling, watering, spraying, fertilizing and fund-raising.

Workers. Invite volunteers – Saturdays for those who work during the week and weekdays for those who are retired. Discuss the need for workers with local law enforcement agencies to obtain help of young persons who have been arrested for minor offenses.

Approvals. Obtain approval of the owners of the plots to be improved. When we planted trees in the sidewalk areas, we had to get approval from electric, gas, water and telephone companies, as well as from owners, tenants, Borough Council, Shade Tree Commission and other interested groups.

Contributions. Ask for donations from those who you think would be interested or from those who can afford to help. After you have accomplished something and someone admires it, ask them for their financial or physical support. Send follow-up requests from year to year. Your list of contributors will grow with time. As you show more results, the public will respond, and you will have funds to expand. Public acknowledgement, i.e., plaques, is helpful in obtaining larger donations. Acknowledge all contributions by letter. Be sure to get a tax exempt status for your organization so that contributions will be tax exempt.

Short range plans. Periodically review what you have done, and what needs to be done. Make a list of the tasks; when they are completed, cross them off the list. By doing so you will always have a schedule of things to be done in a priority order. This listing is important in assigning volunteers for specific jobs.

Financial Support

Individuals have contributed cash and plants. Organizations such as Lions Club, Rotary Club, civic associations, women's clubs and others have contributed funds. Other organizations such as the Arboretum of the Barnes Foundation have donated shrubs. Some organizations offer substantial discounts on purchases including plants. The Narberth Business Association holds an annual dinner, including plants, and for the last two years they made NICE the beneficiary of their "auction." One businessman provides the water for several of the gardens.

continued



photo by C. Wallace Kunkel

Mary Jane Cobbs working on the island on the north side.

An Acknowledgement plaque for those who make substantial contributions is located at the Borough Hall. Brass plates are affixed to the plaque listing the donor.

septa and others say thank you

Southeastern Pennsylvania Transportation Authority (SEPTA) commended NICE for the landscaping improvements and the daily care at the Narberth train station.

SEPTA said that the Narberth station "could not be matched at any of our other 180 stations," and that "we wish it could be emulated by other concerned community groups interested in our rail stations throughout the system."

The Main Line Chamber of Commerce awarded the "Beautification Award" to NICE. The Award is usually given for architectural improvements, but an exception

was made for our efforts.

The Narberth Business Association gave NICE a "Station Beautification Award" in appreciation of our garden activities.

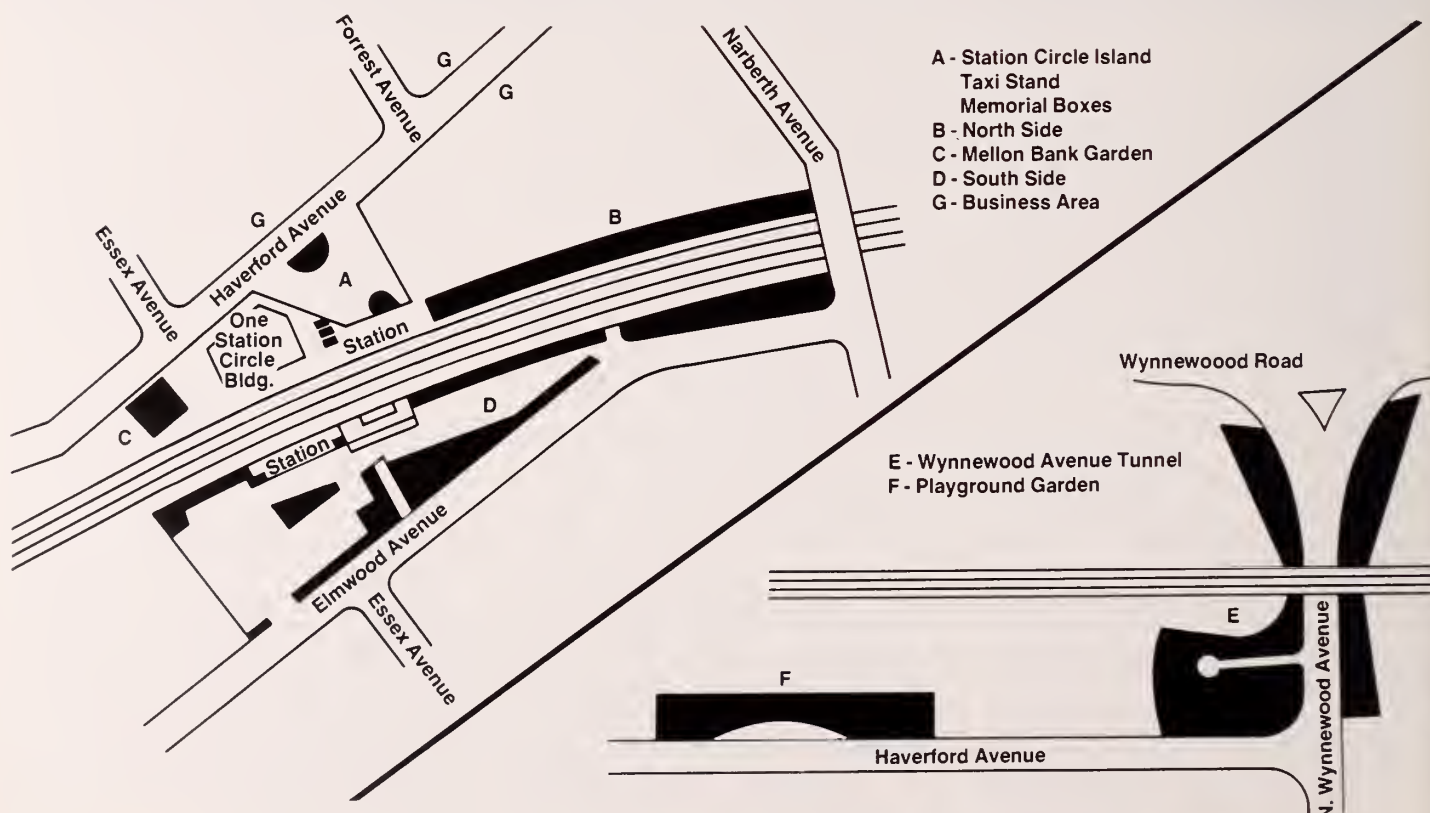
The Garden Club of Bala Cynwyd granted NICE an award in appreciation of the effective use of landscaping to beautify our environment.

The Men's Garden Club of Delaware Valley presented a Certificate of Recognition for "A Vision Fulfilled."

bread on the waters

Other communities have observed what we have done. Residents from other stations along the Main Line have begun to fix up and beautify their stations. It has been challenging to plan, raise funds, recruit volunteers and see the results enjoyed by so many. We've received "thank you" notes and comments telling us how much our work is appreciated. That is a bonus added to the satisfaction of doing the work.

Jeff Eyster's goal has been to beautify his town and to make it a better place in which to live. He has succeeded. He was mayor of Narberth from 1978 to 1982 during which time he organized a Community Watch program. Eyster is general manager of the Narberth Improvement and Clean-Up Endeavor, the organization that has been sponsoring the many improvements to Narberth. He is now retired from his job as an investment broker for Kidder Peabody Co. He received the Citizen of the Year Award from the Narberth Civic Association for unselfish devotion to the Borough of Narberth.



classified ads

4 ft. *Franklinia* trees, \$19.99, Meddler tree 5-6 ft. \$29.99, *Viburnum carlesi*, double-file, many more viburnum, sweet bay magnolia 5 ft. \$19.99. 100's of herbs, perennials, and scented geraniums. Visit our herb garden, herb classes, lectures, herb week in May. Send SASE for brochure.

Triple Oaks Nursery & Florist
Rt. 47 S. Delsea Drive
Franklinville, NJ 08322
609-694-4272

Green Scene covers, full page pictures, maps, newspaper articles laminated and framed. Call **SIGN PRINTERS**, 215-825-8799. For further information, write Box 2, Miquon, PA 19452.

Ways with Wildflowers - A fine booklet representing many years of experience at Bowman's Hill Wildflower Preserve. This publication strives to give an understanding of the natural habitats of native plants. An appendix gives needs and characteristics of 300 wild plants. Also included are directions for handling seeds. \$4.70 plus 28c PA sales tax. (Postage and handling 1-3 copies 75c, 4-6 copies 95c.) Booksellers discount. Bowman's Hill Wildflower Crossing Historic Park, Washington Crossing PA 18977.

Sunrooms - Greenhouses
Redwood Window Greenhouses
Full Size Samples on Display
Aluminum, Redwood, Swedish Fir
Custom Design and Installation

SunSpaces Inc.
Main & Walnut Sts.
North Wales, PA 19454
215-699-3747

OUTDOOR FURNITURE
To replace or recycle
Hill Co.
8615 Germantown Ave.
247-7600

We make your outdoor furniture look like new.

Tropical *Monstera deliciosa* - 9 ft. high very full potted plants. 2 ft. x 2 ft. leaves. From architect's studio. (215) 357-2827

MEADOWBROOK FARM

This year share in the famous **Meadowbrook style**. Statuary, fountains, decorative pots. Rare greenhouse exotics and topiary. For the garden, our largest selection ever. Many unusual varieties of annuals, perennials, trees and shrubs. English wallflowers. Perennials for shade. Custom urn and container plantings. See our new perennial display garden. 12 miles north of center City. See us at the Philadelphia Flower Show!

"More than just a greenhouse."
1633 Washington Lane
Meadowbrook, PA 19046
887-5900

IT ISN'T EASY BEING GREEN unless you have a QED residential Lord and Burnham greenhouse added to your digs. We design, erect, and equip to satisfy your rules of green thumb. Grow anything green year-round (except perhaps frogs). **QED, INC.** - offering expected amenities to the Philadelphia Main Line and Chestnut Hill. 688-1514. P.O. Box 161, Villanova, PA 19085.

Specializing in the Unusual ... Dwarf rhododendrons, deciduous and evergreen azaleas, dwarf evergreens, companion plants. Catalog \$1.00, refundable. The **Cummins Garden**, 22 Robertsville Road, Marlboro, NJ 07746. Phone: 201-536-2591

GREENHOUSE REPAIRS AND MAINTENANCE

Sales and Construction
GEORGE C. MATT, INC.
212 St. Georges Road, Ardmore, PA 19003
215-649-2745

Introducing Flora-Feed, fantastic plant food. Only pennies per plant per month. For free sample send 39c postage handling. Pan-Nutrition Inc., 380 Parry Road, Warminster, PA 18974.

ROSE VALLEY NURSERIES

Recipient of the 1983 Philadelphia Flower Show, Inc., Silver Trophy. Visit our garden center and landscape design office for seeds, plants, and plans. Staffed by professional horticulturists. 684 S. New Middletown Rd., Media, PA 19063. (215) 872-7206.

DWARF & UNUSUAL CONIFERS, JAPANESE MAPLES. Visitors welcome. Educational dwarf conifer display. Send 80c in stamps for informative booklet. Phone 609-585-5387. **Dilatush Nursery**, 780 Rte. 130, Robbinsville, NJ 08691

LAUREL HILL GARDENS
8125 GERMANTOWN AVE.
CHESTNUT HILL, PA
247-9490

- Over 350 varieties of select herbaceous perennials, wildflowers, and ferns.
- Flowering, unusual, and rare trees as well as tried and true varieties.
- Large selection of dried flowers and arranging supplies.
- Distinctive terra cotta pottery.
- Landscape design and installation services.
- Garden club representatives are invited to contact us concerning group orders and discounts.

LAUREL HILL GARDENS

Complete Lawn and Gardening Maintenance
(Grass Cutting)
Shrubs Fed and Trimmed
John J. Galante
104 Atwood Road • Erdenheim, PA 19118
836-5622 • 836-5739

ARBORICULTURE SERVICES

Custom Pruning and Complete Care of Trees and Shrubs to Promote Healthy Attractive Plants

McFARLAND LANDSCAPE SERVICES

Phila. - 438-3970
East Mont. Co. - 646-7222
Main Line - 688-6644

PLANTED TOPIARY SCULPTURES. Many designs. Shipped anywhere. Free catalog. Credit cards & phone orders. 215-925-4125. **EXOTIC BLOSSOMS**, 510 South 5th Street, Philadelphia, PA 19147.

Would you like to be able to tell a witch hazel from a Cornelian cherry Dogwood? The **Tyler Arboretum Bookstore** offers a complete selection and culture. 515 Painter Road, Lima, PA 19037. Tel. (215) 566-9133.

Specialists in Japanese, city and naturalistic gardens. Featuring volcanic rock, ornamental pools, waterfalls and terraces. Plantings designed by landscape architectural service department, installed by expert landscapers.

J. Franklin Styer Nurseries
Concordville, PA 19331
459-2400

GARDENER WANTED

Small Estate in Haverford. Use of small apt. 3-day week. Send letter to Michele, 308 Walnut St., 4th Floor, Philadelphia, PA 19106.

Now rely on a single source for lawn mowing, fertilizing, feeding, sodding, tree pruning, shrub shaping, flower bed development, mulching, spring, fall and storm cleanup. Designing now for this spring. Call for appointment.

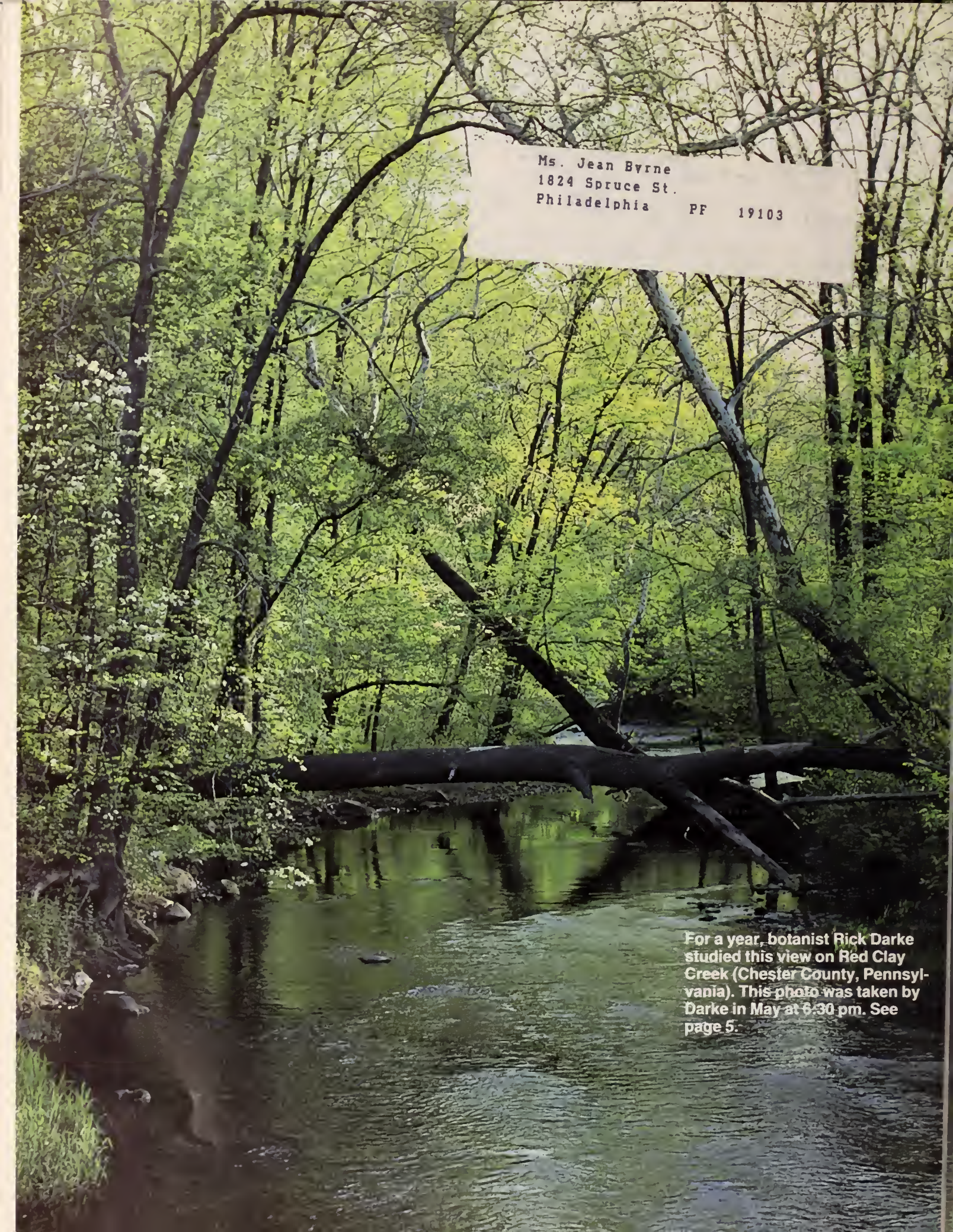
Warren Lewis/Landscape Design
108 Woodside Road
Haverford, PA 19041
215-649-4561

AMERICAN RHODODENDRON SOCIETY

Valley Forge Chapter Plant Sale
Many varieties of rhododendrons and azaleas.
Saturday, May 11, 1985
V. F. Methodist Church
located on Rts. 23 only 1/4 mi. north of Rte. 252,
Valley Forge, PA
9 am - 3 pm

SALE

FULLY EQUIPPED LORD & BURNHAM GREENHOUSE with 3-level, one-family house attached with outdoor garden area. Located E. Poplar urban renewal area, center city. Front lawn, shrubbery, 145 ft. privet hedge and interior fairy rose hedge. Rose bushes, etc., added benefit. By appt. only, 922-7480.



Ms. Jean Byrne
1824 Spruce St.
Philadelphia PF 19103

For a year, botanist Rick Darke studied this view on Red Clay Creek (Chester County, Pennsylvania). This photo was taken by Darke in May at 6:30 pm. See page 5.



*French Horticultural shell beans.
See page 24.*

THE
**green
scene**

HORTICULTURE IN THE DELAWARE VALLEY
MAY • JUNE • 1985

\$1.50



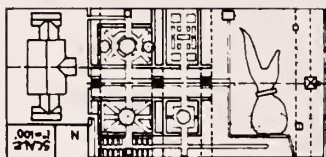
3



12



21



31



3. A Sure Sign of Spring: The Annual Herb Sale

Anne S. Cunningham

8. Searching for Antique Ornamentals: Endangered Cultivars that Give Perpetual Comfort and Delight

Arthur O. Tucker

12. A Business Sprouts in Wagontown, PA

Jane Pepper

14. Windus Lilies

Kathryn Andersen

17. A Newly Constructed City Garden. An International Garden at Franklin Town: A proving ground for plants in the city

Paul W. Meyer

21. A Reconstructed City Garden. The William Paca Garden in Annapolis Steps Back in Time

Amalie Adler Ascher

24. Shell Beans

Walter Chandoha

26. Four Favorite Perennials for the Shady Garden

Elizabeth B. Derbyshire

28. Strange Bedfellows: Edibles and Ornamentals

Bob Hyland

31. A Shrub Divided Makes Two

Bill Thomas

33. *Spigelia marilandica*: A Southern Beauty

Claire Sawyers

34. The Plant Finder

34. Letters to the Editor

35. Classified Advertising

Front cover: French Horticultural beans. See story on page 24.
photo by Walter Chandoha

Back cover: photo by S. B. Bennett

Volume 13, Number 5

May/June 1985

THE PENNSYLVANIA HORTICULTURAL SOCIETY

325 Walnut Street, Philadelphia, Pa. 19106

Telephone: 215-625-8250

Horticultural Hotline: 215-922-8043

Robert S. Ryan / *Chair*

Jane G. Pepper / *President*

Jean Byrne / *Editor*

PUBLICATIONS COMMITTEE:

Adele G. Greenfield / *Chair*

Judy Foley / *Vice Chair*

Kathryn S. Andersen

Darrel Apps

Anne S. Cunningham

Charles W. Heuser

Natalie Kempner

Lynn Kippax

James J. McKeen

L. Wilbur Zimmerman

Designer: Julie Baxendell, Baxendell / Lambeck Associates

Separations: Lincoln Graphics **Printer:** Havertown Printing

THE GREEN SCENE, (USPS 955580) Volume 13, No. 5, published bimonthly, January, March, May, July, September, November, by the Pennsylvania Horticultural Society, a non-profit membership organization at 325 Walnut Street, Philadelphia, PA 19106. Subscription: \$8.50—Single Copy: \$1.50. Second class postage paid at Philadelphia, PA 19106. • **POSTMASTER:** Send address change to THE GREEN SCENE, 325 Walnut Street, Philadelphia, PA 19106.

© Pennsylvania Horticultural Society, 1985

Green Scene subscriptions are part of the membership benefits for:

Pennsylvania Horticultural Society

Maryland Horticultural Society

Frelinghuysen Arboretum


Skylands Arboretum

Blithewold Gardens and Arboretum

Reeves Reed Arboretum

A SURE SIGN OF SPRING:

The Annual Herb Sale

 by Anne S. Cunningham

On May 9, in the budding Chester County countryside, city window-box gardeners, country gardeners and a wide variety of herb enthusiasts will gather for The Annual Herb Sale. The opening ritual is the same each year.

Hours before the Sale starts, cars arrive from all over Pennsylvania, New Jersey, Delaware, Maryland, and New York. People with large baskets and empty boxes line up near the roped-off fields, patiently waiting to purchase some of the 6,000 herb and spice plants available.

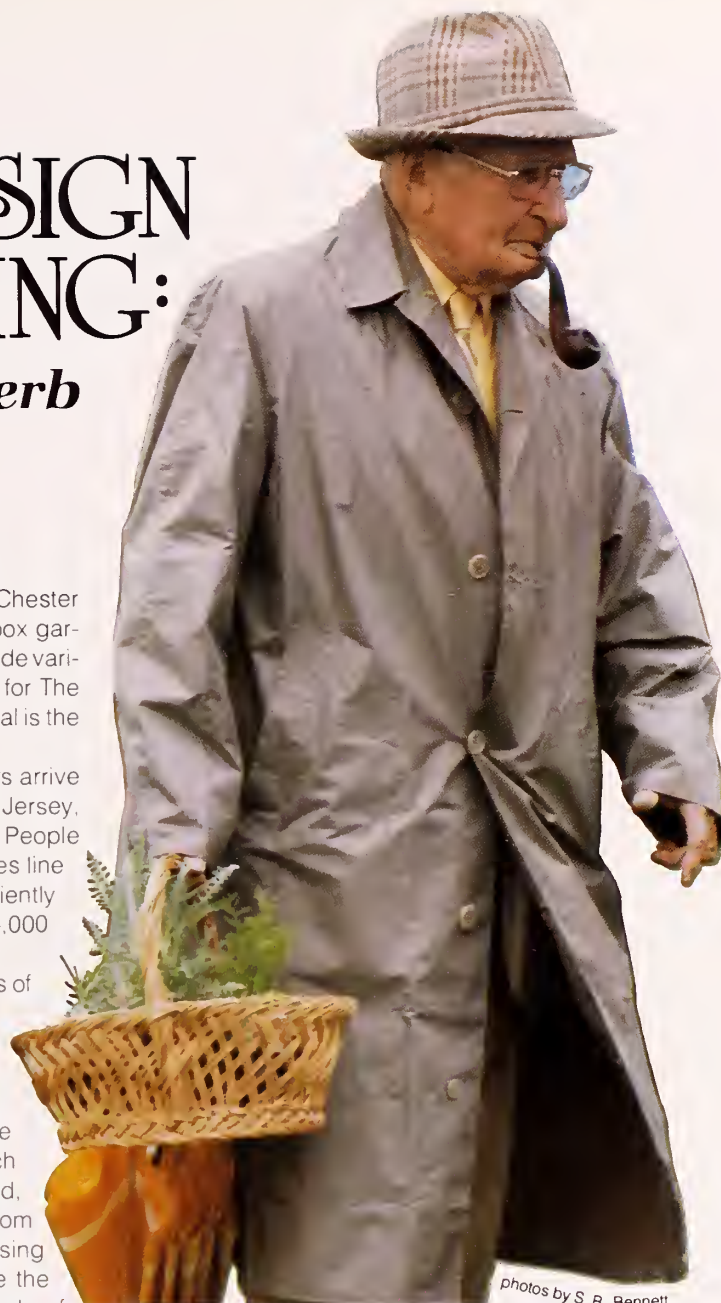
Customers watch while members of The Philadelphia Unit of The Herb Society of America finish setting up the Sale. The plants include annuals grown by dedicated members, perennials divided from the gardens of generous members such as Joanna Reed and Nancy Howard, and still more plants purchased from wholesalers to meet the ever-increasing demand. The last few days before the Sale are spent setting up thousands of potted plants in alphabetical order, placing meticulously lettered signs behind each group.

A typical sign reads:

GARDEN SAGE
SALVIA OFFICINALIS
Height: 2 ft.
Exposure: Sun
Flower: Blue

Uses: Culinary, ornamental, tall border
Beginners are inspired, experts appreciate the quality of the plants, the accuracy and wealth of knowledge.

The Sale is held rain or shine. Bad weather bothers the Sale's organizers more than it bothers the customers, who come in numbers proportional to the temperature, but who nevertheless manage to snap up every living plant within the first few hours. Last year, at Bryce and Joyce Douglas'



Photos by S. B. Bennett

farm in Kimberton, the set-up days were bright and sunny, full of the smells, sounds, and excitement of spring. The day of the Sale was cold and drizzly, but the enthusiasm of the crowd combined with the warmth of the members made the Sale a success.

In the century-old barn next to the tables of herbs and spices, hundreds of home-made herb specialties are available. Members have spent the better part of the year since the previous sale, making herb jellies, like white grape jelly with thyme; vinegars, like tarragon vinegar, basil vinegar, "dill, garlic, mint vinegar," and much more. Preserves such as dill onion rings and hot peppers in sherry are always popular. Herbal breads sell so well, the members cannot make enough, so they contract out to a local baker to make 300

continued

People who have been to the Sale before, usually head for the "Specialties" booth first. There they can find rare and unusual plants, in limited quantities, almost all grown by members.



Dressed for inclement weather, armed with baskets and boxes, customers wait for the Sale to begin.

additional loaves of bread the morning of the Sale.

In the Boutique section of the barn, potpourris, sachets, white lilac bath oil, lavender soaps, herb books and cookbooks, special gardening tools, spice grinders, dill dips and other concoctions like "Salad Surprise" are just a few of the many items for sale. A unique selection of terra cotta pots is available for decorative and practical use. Last year, a potpourri demonstration was put on by the untiring, generous herb expert, Joanna Reed.

The Herb Sale has been held annually over most of the past 40 years. Originally, an herb-based luncheon was served to the first 200 people who made reservations. If it was sunny, they ate outside, seated at cloth-covered tables, and sipped May wine in the beautiful spring weather. If it was raining, customers cheerfully took their elegant lunch to whatever portion of the host house or barn was available. Veterans of the Herb Sale remember when it was held at Chief Justice Roberts's farm in

Birchrunville. One year so many people showed up in spite of the downpour, that they ate sitting on the dining room floor, and several found places to sit in a large upstairs bathroom.

Recently attendance has so increased that the original format has been abandoned to accommodate the crowds. The luncheons have evolved to a limited but interesting selection of herb-based food available in a tented Snack Bar. The food committee works hard to develop menus adaptable to the weather, such as soups that can be served hot or cold. Beautifully set tables are spaced throughout the food area with centerpieces of artistically arranged scented geraniums and other herbs.

the specialties booth

People who have been to the Sale before, usually head for the "Specialties" booth first. There they can find rare and unusual plants, in limited quantities, almost all grown by members. Herb Society mem-

bers who staff the booth are well informed and pleased to share their knowledge. Last year, a buyer asked Henny Truitt and scholar Nancy Howard about basil, and was treated to some herb lore: the plant was considered evil among the Ancient Greeks and held sacred by the Indians. In Italy, they explained, young girls who wanted to see their beaus, would put pots of basil on the windowsill, indicating they were ready to receive visitors.

The Specialties Booth stands out because it has so many herbs not commonly available. While an interested customer might be able to find lavender at other plant sales, here he can find an outstanding collection of tender lavenders, including *Lavandula stoechas*, *L. pedunculata* (the original historical lavender), *L. pinnata*, *L. dentata candicans* (fringed lavender with a particularly good scent) and several more. Herb Sale chairperson Janie Smith speaks with pride of the dozens of different scented geraniums and the unusually large variety of salvias, rosemary, and



From thick jams to spicy mustards, the homemade items sell quickly.



"We go for the rare herbs we can't find anywhere else, even in catalogs," say Lee and Bill Drinkwater, managers of the coffee/tea/herb/spice stand at the Wayne Farmer's Market.

basil from which customers may choose.

At the 1985 Herb Sale, an Educational Exhibit will highlight 18 important herbs. Photographs, detailed line drawings, history, culture and instructions on use will educate visitors. In addition, Joanna Reed and other experts will gladly answer questions about herbs at an Information Booth. Plant chairperson Biddy Watson has compiled a comprehensive list of all the herbs for sale and others considered important, all with proper nomenclature and valuable information. For anyone who has ever considered planting "just a little herb garden," this would be an ideal opportunity to consult the experts and start a garden the right way with fine plants.

The Herb Society of America has 25 Units nationwide, and most of them conduct an Herb Sale each year. Units are small and membership is by invitation. The Philadelphia Unit is chaired by Joyce Douglas, host for the 1984 and 1985 Sale. They stress education, research, and scholarship; and many of them have made

continued

A SURE SIGN

continued

significant contributions in these areas by doing outstanding plant propagation, writing books on their specialty, designing public gardens, and teaching others.

Lee Whitfield, writing for the *New York Times* (Sunday, June 12, 1983), described the Herb Society of America as "an organizational anachronism — a 20th century American counterpart of a 19th century English 'learned society.' The Society has a single purpose: the study of herbs, defined by its founders as "plants which may be used for physic, flavor, or fragrance" and then to contribute the results of its research to others. What he doesn't mention in this descriptive capsule is the genuine love of

subject. Watching members of the Philadelphia Unit of the Herb Society of America, one sees avid gardeners, hard workers, humble experts, talented and creative people. Their scholarliness is not so all-encompassing as it is a means to an end: disseminating knowledge and love of herbs. Proceeds from The Annual Herb Sale of The Philadelphia Unit benefit The National Herb Garden in Washington, DC; the Fragrant Garden of Tyler Arboretum in Lima, Pa.; The Herb Society of America Scholarship Fund, and historic Hope Lodge in the Ambler, Fort Washington area.

This year's Herb Sale will be held again at the home of Bryce and Joyce Douglas,

Kimberton-Pughtown Rd., in Kimberton, Pa. on Thursday, May 9, opening at 10:00 am. By 2:00 customers will be lucky to find a pot of parsley, for everything else will be gone. Beginners, experts, amateurs, and professionals enjoy The Annual Herb Sale. The friendly atmosphere and beautiful countryside by themselves would inspire a drive in the country, even if one didn't have a garden, a sunny windowsill, or adventuresome tastebuds.

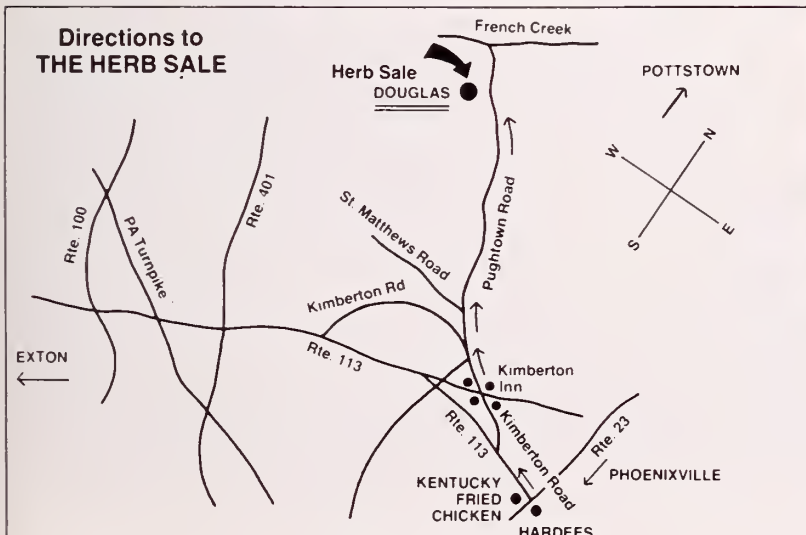
●
Anne Cunningham, a member of the PHS Publications Committee, writes frequently on garden subjects. Her work appeared recently in *The Philadelphia Inquirer Annual Garden Guide*.



Local garden club volunteers help Herb Society members like Joanna Reed (in pink) on the day of the Sale.




Customers can learn a lot from the informative cultivation signs and detailed, accurate plant labels.



"No matter what you like to cook, or how little you have in the kitchen – even one egg – you can make something tasty with herbs."

SEARCHING FOR ANTIQUE

Endangered Cultivars that Give Perpetual

 by Arthur O. Tucker



photos by Arthur O. Tucker

The brick-red cultivars of the polyanthus probably date back to the late 16th century. These are true antiques, cultivated by countless amateur gardeners through countless generations. Why did I ever discard such a useful perennial?

8

polyanthus

When I took over my parents' garden as a hardheaded, know-it-all teenager, I viewed my first charge as ridding the garden of "common" plants and replacing them with the named cultivars so extolled by the horticultural magazines of the day. After all, who wants what everyone else has? The first casualty was an unnamed, brick-red cultivar of the polyanthus (primrose). Everyone in our neighborhood had them, and the new 'Pacific Giants' polyanthus were so-o-o much better, so the ads said. No one from Madison Avenue really needed to conduct an advertising blitz to convince me that the 'Pacific Giants' were bigger and more colorful. What the ads neglected to mention was that the 'Pacific Giants' are, at best, short-lived perennials and better treated as biennials. The only 'Pacific Giants' that persist for me are the occasional yellow ones that seem to be

closely related to the common primrose, *Primula vulgaris* (*P. acaulis*). On the other hand, the brick-red polyanthus were true perennials, increasing from year to year in our dry clay and always dependable for a splendid spring show. Oh, how I wish that I had not been so hasty. I have not had the chance to return to my old neighborhood and ingratiate myself with the Slavic and Pennsylvania German women who have nurtured the brick-red polyanthus through countless generations.

Fortunately, my aunt preserved one of the brick-red polyanthus that is locally called "cup-and-saucers." This polyanthus represents the hose-in-hose polyanthus in which the petals are enclosed within petaloid sepals. I had never realized the variety of these "common" plants until I looked at them with a botanist's eye.

I now realize that these brick-reds are quite old; I have found them pictured in

paintings from the 17th and 18th centuries. The delicate tracing of gold edging in every bloom was the genetic forerunner of the gold- and silver-laced polyanthus so popular in the Victorian gardens.

Other *Primula* cultivars are equally collectable and date from Elizabethan times: the double, 'Galligaskin,' 'Jack-in-the-Green' (each bloom with a delicate green ruffle), etc. While I have acquired these forms from some specialty *Primula* growers, I have not yet encountered them in local old gardens. Instead, I have found a number of very good perennial polyanthus that range the gamut of the parents (*P. vulgaris*, *P. veris*, and *P. elatior*) in brick-reds and yellows. I think that the perennial nurseries should acquire these polyanthus and promote them as really good perennials, not the 'Pacific Giants.'

As a botanist I am intrigued by the many cultivated plants that have escaped and

ORNAMENTALS:

Comfort and Delight



Here 'Shailer's Provence' rose has survived weeds, annual mowing, and some highway maintenance and still endures. Do our modern roses have the same staying power?

become part of our naturalized flora. My botanical predecessors usually ignored escaped cultivated plants (they are difficult to identify without keys, and horticultural nomenclature seems to have a "tainted" aspect to many botanists). When these escapees were collected in the past, the herbarium specimens were labelled simply as "*Rosa* cultivar," "*Narcissus* sp.," or "*Iris* of garden origin." That is not good enough for me; I want to know the full name.

daffodils

The daffodils on Delmarva are relatively easy to identify. The two most common escaped cultivars are 'Telemonius Plenus' and 'Primrose Peerless.' My children used

The irises are completely baffling: so many cultivars and so few adequate descriptions.

to pick the double yellow blooms of 'Telemonius Plenus' every spring from the site of a former farmhouse. I always viewed this cultivar as a "sloppy" double, bearing irregular petals and sometimes showing streaks of green. Then, when I found the same daffodil illustrated by Parkinson in 1629, 'Telemonius Plenus' took on a new meaning. Parkinson, likewise, illustrated 'Primrose Peerless.' Daffodil hybridization did not really begin on any grand scale until the end of the 19th century, and our ancestors were limited by the few cultivars available. Here, free for the taking and usually mowed over anyway, were cultivars from the 17th century: true antiques and persistent yet.

irises

The irises are completely baffling: so many cultivars and so few adequate descriptions. I always look for the older, diploid iris. These irises are shorter, less opulent, more closely branched, and produce more flower spikes than the modern tetraploid iris. Rather than identify the cultivars now, I just collect what I like from old farmhouses, roadsides, etc. Maybe someday I'll find the Rosetta Stone of iris cultivar identification.

continued

roses and others

The roses are a severe challenge. Without some eminent members of Heritage Roses I would be lost. Léonie Bell and her publications deserve special mention, as do the Coleman reprints of the classic rose texts. 'Shailer's Provence' is all over the local graveyards but offered by almost no nursery. This rose dates from around 1796 and was a hybrid of "the spineless or Virgin's rose" (probably an extinct selection of *Rosa x alba*) and 'Old Blush.' Many more roses have been found on Delmarva: the pink moss rose 'Duchesse de Verneuil' from 1856, the white moss rose 'Comtesse de Murinais' from 1843, the damask

hybrids 'Pink Leda' from pre-1827 and 'Bella Donna' from pre-1829, and 'Seven Sisters' (*R. multiflora* 'Platyphylla') of 1817. Others are really lovely, with or without a name, but for now "Betty's Rose from Warwick" and other names must suffice.

Other plants have been found. Local childrens' graves are covered with hybrid derivatives of the cottage pink, *Dianthus plumarius*. Lilacs abound, but they all seem to be very similar and probably are *Syringa vulgaris* in its undeveloped form. I guess that the French hybrid lilacs never really sold well here. The weedy orange daylily, *Hemerocallis fulva* 'Europa,' is all over the roadsides. 'Europa' is a self-sterile

triploid and does not normally set seed. I have not encountered any tulips in my searches (tulips really need to be taken up and held dry every summer in order to persist), but I do notice that one of the few old tulip cultivars still sold is 'Keizerskroon' from 1750. Most of the other cultivars of tulips have degenerated and died out but 'Keizerskroon' lives on.

conifers

Conifers abound around the Victorian houses in Delaware and the Eastern Shore. *Chamaecyparis pisifera* 'Squarrosa' (1843), the moss retinospora, is common and roots easily from cuttings. 'Squarrosa'



A warning to all collectors of antique plants: gradually you run out of room and, after accommodating a little plant here, another there, you have a cottage garden. I was forced to rip up the front lawn for this garden. The red gallica hybrid rose 'Charles de Mills' (c. 1830) and the white damask hybrid rose 'Mme. Hardy' (1832) were acquired from a nursery but are too beautiful to omit from a found antique collection.



Once I found an antique moss rose and fern-leaved tansy (*Tanacetum vulgare* 'Crispum') growing together. After battling poison ivy, mosquitoes, irate farmers with guns (they usually go away when you ask politely to search for "flowers"), black snakes (they love the rats and mice that congregate in derelict farmhouses), and the steamy heat of Delmarva, my mind begins to wander. Were these two plants used in a symbolic Victorian bouquet (moss rose = capricious beauty, tansy = resistance)?

makes no secret of its browned out foliage and has been replaced by the bluer and softer 'Boulevard' ('Cyanoviridis') of 1934. Sargent's weeping hemlock (*Tsuga canadensis* 'Pendula') was originally found in the wild in New York in 1870 and occasionally is found in old Victorian landscapes. The Irish yew (*Taxus baccata* 'Fastigiata') abounds in the "necrological gardens" or Victorian cemeteries/parks: to think that all these Irish yews descended from a plant found about 1780 in the County of Fermanagh, Ireland.

While not found as cultivars, Japanese cedar (*Cryptomeria japonica*), grand fir (*Abies grandis*), white fir (*Abies concolor*), and Norway spruce (*Picea abies*) grace the Victorian mansions. Our forefathers planted these trees too close to the houses, and now they rub and shade the best of Victoriana. I guess gardeners never learn. One still encounters whole avenues planted with only one or a few selections of evergreens. I suspect that itinerant agents, traveling door-to-door in Victorian times, had surplus "specials" that they pushed at discount prices.

Identifying the old ornamentals is a challenge and a lifelong hobby. A good cultivated plant manual with a key, such as Bailey's *Manual of Cultivated Plants* or Rehder's *Manual of Trees and Shrubs*, is a necessity. A good introduction is *The Fragrant Year* by Helen Van Pelt Wilson and

Léonie Bell. All the books on antique plants and cottage flowers by Roy Genders deserve special praise. Parkinson's *A Garden of Pleasant Flowers* of 1629 and Gerarde's *Herbal* of 1633 should certainly be consulted. Membership in the specialist societies becomes a requirement as the pocketbook dictates.

I have finally found what I call "origination lists." These are lists of cultivars, their origin, and the dates of introduction. They are sometimes published by the specialist societies or the international registries for the plant group. I have located lists for roses, conifers, daffodils, tulips, lilacs, dahlias, pinks, irises, peonies, violets, fuchsias and ivies.

England is far ahead of America in preserving "endangered" cultivars. The National Council for the Conservation of Plants and Gardens (NCCPG), affiliated with the Royal Horticultural Society at Wisley, has already prepared lists and generally promoted these old cultivars. The activities of NCCPG are reported in the RHS journal *Garden* (available in the reference section of the Pennsylvania Horticultural Society Library).

The old cultivars can be as clinical or romantic as the treasure hunter wants. I cannot close without quoting Reginald Farrer, the doyen of British rock gardening. Farrer seems to embody the romance of collecting antique plants, admittedly in a

morbid fashion:

Dead bones in their grave lie Mary and Elizabeth, Queens; and dead dust of death is all they did; but the flowers they grew in their gardens still continue giving comfort and delight perpetually, down through the continuing generations, to whom the people of the past are mere phantasmal fictions in books, diaphanous, desiccated as dried flowers themselves

Books Available at Pennsylvania Horticultural Society Library

Collecting Antique Plants; The History and Culture of the Old Florists' Flowers. Roy Genders, Pelham Books, Great Britain, 1971.

The Fragrant Year, Scented Plants for Your Garden and Your House, Helen Van Pelt Wilson and Léonie Bell, M. Barrows & Co., New York, 1967.

Manual of Cultivated Plants, Liberty Hyde Bailey, Macmillan, New York, 1949.

Manual of Cultivated Trees and Shrubs, Alfred Rehder, Macmillan, New York, 1949.

PHS Collection, available at American Philosophical Society, for reference only:

A Garden of Pleasant Flowers, John Parkinson, 1629.

Herbal, John Gerarde, 1633.

Arthur O. Tucker is a research associate professor and co-curator of the Claude E. Phillips Herbarium in the Department of Agriculture and Natural Resources at Delaware State College in Dover. His personal interests include the systematics and cultivation of essential oil/herb plants and the flora of the Delmarva Peninsula.

A BUSINESS SPROUTS IN



WAGONTOWN, PA.

 by Jane Pepper

Some years ago Gail Pippin fired up her pick-up truck and set off for the big city. Her one-year-old daughter was on the seat beside her. In the back she carried her samples — alfalfa sprouts, spicy sprouts, sunflower sprouts and crispy sprouts. The first person she approached in Philadelphia, a buyer for a large supermarket chain, just laughed at this kid from Chester County, dressed in blue jeans with a child in one hand and a basket of sprouts in the other. As far as he was concerned, sprouts were grown by health food nuts in mayonnaise jars beside their woodburning stoves. He knew his customers, he told Gail; they wanted cauliflowers, carrots and iceberg lettuce, rather than sprouted seeds. And anyway, how could the Pippins' backroom operation possibly produce enough to make it worthwhile for him to offer them to his customers.

That was seven years ago. These days Gail and Don Pippin grow and pack 3,000 to 5,000 pounds of sprouts per week in their barn at Windy Hollow Farms, Wagontown, Pa. and deliver them to the Philadelphia Food Distribution Center and several large supermarket chains in the Philadelphia area, as well as to markets in New York City. Gail handles the sales promotion, develops the packaging and graphics. Their manager Bob Rock handles the six-person work force and Don, who has built most of the machines for the operation, keeps them running and organizes

the deliveries.

Those of you who have grown sprouts in the kitchen in jars may wonder at machinery in connection with sprout growing. At first the Pippins grew their seeds in jars like the rest of us, producing about 50 pounds per week for delivery to a couple of small grocery stores in the Media area. As they sought to expand they sprouted the seeds on trays, then in flats such as a gardener

Soon he was bringing home cases of ginger root grown in Fiji and Hawaii, sacks of snowpeas from Guatemala and bags full of shallots and pearl onions.

would use for starting seeds. As they became more sophisticated, Don crafted automated misting and lighting systems, scrounging pieces and parts from other operations and systems.

In those early days it was hard to find reliable information on the optimum temperature for sprouting various seeds, for the best kind of growing and shipping containers and, most important of all, good sources of seeds. There was no alternative, said Gail, to experimentation. They learned, for example, that hygiene is vitally important to the sprout grower. All the equipment and the growing and packing areas must be frequently washed down with a weak bleach solution. They also learned that metal and plastic trays and growing units are far more desirable than

wood. Wood can play host to strains of bacteria that can be so devastating to sprout growers, leaving their crops foul-smelling, mushy and unacceptable in the market. Gail and Don are all too familiar with this problem, having suffered through one seemingly endless six-week period when they were unable to produce any saleable sprouts.

In the winter, demand for sprouts is high and the Pippins produce more than two tons of sprouts each week in a 20 x 30 ft. section of their barn where the temperature is kept around 68°F in winter. First the seeds are soaked, left to rest, then placed in plastic growing trays and set in a rack. Throughout the three-and-one-half-day growing cycle the seeds are misted. For the first three days the growing area is almost dark. When the seeds reach about 2½ in. in height, fluorescent lights are placed in front of the trays to encourage development of chlorophyll and turn the seed heads green. After another 12 hours the sprouts are ready for packing.

With minimal land and light requirements, most sprouts are, according to Gail, grown in big cities. Philadelphia, however, does not appear to have any large-scale producers at present. Customers in various parts of the country differ in their preference for varieties of sprouts and their presentation. At Windy Hollow Farms they produce alfalfa, clover, spicy (alfalfa and radish), sunflower, cress, crispy (lentil,

adzuki and pea), blackeyed peas, and garbanzo bean sprouts on trays and pack them into containers, with all the sprouts standing neatly in line. In other parts of the country sprout buyers prefer the "tousled" look, as if the crop had been grown in a mayonnaise jar and shaken periodically during the growing cycle. Most growers produce this type of sprout in a large drum that must be turned frequently, then the final product is packed in a plastic bag. One such sprout growing drum sits idle in the Windy Hollow Farms barn. Delaware Valley customers will only buy well organized sprouts packed in rigid plastic containers.

repacking – everything from ginger root to taro root

Returning each day from the Philadelphia Food Distribution Center Don Pippin began to contemplate how he could make the trip worthwhile by having a full load in each direction. The early traders, he

reasoned, rarely went from one port to another with an empty hold.

Soon he was bringing home cases of ginger root grown in Fiji and Hawaii, sacks of snowpeas from Guatemala and bags full of shallots and pearl onions. In the barn Bob and his team repack these high-priced items into small containers, then deliver them to wholesalers who distribute them to area supermarket chains.

As with the sprouts, the Pippins have found a market niche. Supermarket customers, becoming increasingly sophisticated in their tastes, seek a wide variety of unusual produce items. In a competitive market, supermarket managers are eager to provide these delicacies because that sophisticated customer is likely to move from the ginger root to the meat department, to the detergent aisle and so on until he or she has a full basket. The demand for these delicacies is, however, limited and most chains find it cumbersome to have to repack items in such small quantities.

At Windy Hollow Farms, however, the repacking operation has become an important part of their business and the list of offerings continues to grow. Dried mushrooms, fried wontons, Chinese turnips, Chinese long beans, bitter melon, water chestnuts and taro root were added to the list earlier this year.

Sprout production and repacking have worked out well for the Pippins. The third part of their business produces beautiful tomatoes and cucumbers year-round but they have yet to figure out how to make this hydroponic operation in a greenhouse in Unionville turn a profit. Having seen their ingenuity and persistence I feel sure, once the appropriate technology has been devised, it won't take the Pippins long to get rolling.

Jane Pepper is president of the Pennsylvania Horticultural Society, manager of the Philadelphia Flower Show and writes a weekly gardening column in the *Sunday Inquirer Books and Leisure* Section.



Above left: Thousands of pounds of sprouts germinate annually in the barn.

Left: Vicki Eastridge packages sprouts for market.

Above right: Plastic trays, artificial lighting and misting systems are some of the secrets of the Pippins' success.



WINDUS LILIES



by Kathryn Andersen

Lily hybridizer Wallace Windus in his garden in Meadowbrook, Pa.

If anyone ever offers you a Windus lily bulb, accept immediately and plant it in your garden for years of pleasure. These lilies have been developed in Meadowbrook, Pa. by retired chemist, Dr. Wallace Windus. During more than 30 years of breeding Asiatic lilies, he has selected out only those that persist and flourish in this area. Ten years ago, Windus invited *Green Scene** readers to hybridize lilies and indeed provided detailed instructions for so doing.

a difficult to grow reputation

True lilies of the genus *Lilium* have long had the reputation of being difficult to grow, too much of a challenge, and short-lived. Until the 1940s little hybridizing had been done between Asiatic species, and most commercially available bulbs were true species. Vigorous species lilies transplanted from a specific and well-defined environment in the wild to our own cultivated gardens may well languish and regress or not even come out of the ground.

I know of a floodplain area in Chester County where a small stream flows through a stand of tall hardwood trees. Just at the edge of the woods, the pendant orange

and yellow bells of *L. canadense* may always be seen by the Fourth of July. In a shaded area of my garden, which is frequently under water in the spring, I have substituted some woody Chester County soil and tried to grow *L. canadense* well. My stems with two to five blooms appear to be healthy though sorely lacking the vigor of their native cousins only 12 miles away where seven to fourteen blooms per stem

When someone with very little space asks for pollen, it is a great compliment to the developer of the lily, and I was pleased to be a link in passing on the Windus line.

is not uncommon. Obviously, I have not been able to duplicate the rather narrow requirements producing true vigor. *L. leichtlinii maximowiczii*, a native of Korea, is the only species that multiplies well for me. Its stoloniferous bulbs have reached out into clumps of daylilies and daffodils, and it has taken over a section of the garden. The beautiful Gold Band Lily of Japan, *L. auratum platyphyllum*, may send up a breathtaking stem the first season. Its rather large succulent green leaves attract virus-spreading aphids and the lily invariably disappears within a year or two. Regression and loss in this instance are

due not to lack of an exacting environment but to inevitable disease.

When Wallace Windus began hybridizing Asiatic lilies in the 1950s, he sought to incorporate blood lines from many diverse species and hybrid groups, reasoning that the wide backgrounds of the parents would produce progeny with tolerance to many garden conditions. He acquired lily bulbs from hybridizers as far away as Oregon, Saskatchewan, New England and even England. His parents were one or two generations removed from such species as *L. concolor*, *L. dauricum*, *L. davidii willmottiae*, *L. leichtlinii* (various forms) and *L. tigrinum flaviflorum*. Over the years he chose as parents the lilies that survived and flourished best in his own garden. He looked for vigor and resistance to such lily diseases as basal rot and botrytis. Lilies with these attributes are easily cultivated in this area, asking only a well-drained location with adequate humus in the soil and as much sun as possible.

The Windus lilies are prized not only for their simple cultural requirements but also for their beauty of form and color. Windus has tried in his hybridizing to produce good Asiatic garden lilies, appropriate for the show table and for the cut flower market. A good garden lily will grow and thrive unattended for many years. It should be

**The Green Scene*, IV, pp. 12-15, March 1975.



photo by Robert Mooney

'Lime Ice' as grown by lily hybridizer Warren Summers.



photo by Warren Summers

showy and make its appearance known. 'Red King' is one of the first Windus lilies I acquired. One bulb planted in 1974 in a sunny new garden has turned into a large stand of soft red upright blooms on 50 stems or more and is now in high shade. Almost every year I have cut a blue ribbon stem. Daffodils nearby are replanted every three years with large amounts of 0-25-25 but the lilies have had no attention whatsoever.

selecting qualities for breeding

A good exhibition lily will have broad, flat and untwisted, overlapping petals, thick and waxy substance, smooth texture, clear color and reasonable size. Blooms will be placed on the stem so that each flower may be seen to best advantage with no apparent crowding or legginess. Blooms may be upfacing, outfacing or pendant. A good lily for the cut flower market must be easily forced and of clean, clear color, which ideally should be apparent in the bud stage. For ease in shipping, upfacing flowers are preferred.

In recent years, Windus has concentrated on unspotted Asiatic lilies and is striving to extend the season of bloom beyond mid-July. This goal is a difficult one in that spotlessness is a recessive trait and only two species, *L. leichtlinii* and diploid *L.*

tigrinum are readily available for parents. *L. tigrinum* is unreliable in passing along its lateness, whereas *L. leichtlinii* frequently passes on its ready susceptibility to basal rot along with its lateness. A successful later-blooming, though spotted pod, parent was 'Margie Wysong,' an orange lily introduced in 1972 by G. Keasey of Oregon. 'Connecticut King,' a spotless gold bred by D. M. Stone of Connecticut in the

The small black bulbils that 'Kismet' produces at each leaf axil were felt to create a certain problem of untidiness to the Dutch housewife should they drop off and roll to the floor.

mid-1960s, appears many times in the pedigrees of the Windus lilies. 'Gold Urn,' an unspotted orange introduced in the 1950s, was the parent most frequently used in the early days of Windus hybridizing.

Since 1957 Windus has registered 30 of his own hybrids with the Royal Horticultural Society and has spread his unnamed seedlings far and wide throughout North America. Of the 30 lilies that he has registered, 12 are currently commercially available at Borbeleta Gardens, four have disappeared entirely and the rest still appear in private gardens. The list at the end of this article details the attributes of a dozen fa-

vorites and includes the commercial sources.

'Lime Ice,' a 4-6 ft. 1977 introduction, is virtually spotless and late blooming. The flower opens soft yellow with a strong lime-green tone, which persists for a day or so. This fine strong lily is successful on the show bench and spectacular in the garden sometimes producing up to 40 blooms. The bulb multiplies rapidly soon producing a healthy stand, definitely eye-catching from across the yard.

'Gold Lode' is perhaps the most famous of the Windus lilies. Derived from a 'Gold Urn' seedling by 'Connecticut King,' it is a 4-ft., upfacing yellow lily with a gold blush in the center of each petal and some spots near the throat. A well-grown stem may produce 35 to 40 blooms. In the Netherlands this lily is known as 'Golden Melody' and is one of the most popular in the cut flower industry. In 1980, it was selected the best lily in the Liliade, a major show in Holland. In two consecutive years this lily received a Certificate of Commendation and an Award of Merit from the North American Lily Society (NALS). No other lily has ever received such acclaim. 'Gold Lode' is one of those rare lilies which is beautiful in the garden, a winner at shows and sought after as a cut flower.

'Kismet,' a regal spotless, deep orange

continued

lily with dark brown ribs on the reverse, failed to pass muster in the Netherlands although it has twice been selected Best in Show in the U.S. (Garden Club of Virginia, Middle American Regional in Missouri). The small black bulbils that it produces at each leaf axil were felt to create a certain problem of untidiness to the Dutch housewife should they drop off and roll to the floor. The bulbils do not drop off my 'Kismet' while it is in bloom in the garden. In fact, I look upon them as a means for rapid propagation. The size and brilliance of 'Kismet' certainly demand attention in the garden.

In 1973, 'Evensong' from 'Nutmegger' by a *L. leichtlinii* seedling with red reverse won Windus the coveted Hornback Award at the annual NALS Show. This honor is bestowed upon the seedling showing most advancement in breeding of all those exhibited in the show. 'Evensong,' which has unfortunately been lost to basal rot, had yellow spotted Turk's cap blooms similar to those of its seed parent, 'Nutmegger,' but distinguished from it by a strong red reverse. This red reverse can be traced back through the pollen parent to a batch of seed produced by Dr. S. L. Emsweller of

the USDA in Beltsville, Maryland. Emsweller was studying *L. leichtlinii* and *L. leichtlinii maximowiczii* and their second generation intercrosses. Excess seed was sent to Dr. Richard W. Lighty of Kennett Square who shared some of his tiny, first-year bulbs with members of the Middle Atlantic Regional Lily Group (MARLG). Upon flowering, one bulb in the possession of Sally Bucknell of Unionville produced a flower with reddish reverse, the parent of 'Evensong.' No other flowers with red reverse were ever found within Emsweller's studies.

'Evensong' may be lost but its progeny live on as do other crosses made by Windus with the Bucknell pollen. Windus shared 'Evensong' pollen with me in 1979. By the summer of 1984, I had selected out two promising seedlings for further evaluation. Pollen from one has already been incorporated into breeding programs of three hybridizers in Maryland and Connecticut. When someone with very little space asks for pollen, it is a great compliment to the developer of the lily, and I was pleased to be a link in passing on the Windus line.

Over the years Windus has generously shared pollen with amateur hybridizers

who come to visit his garden. The influence of this famous lily breeder may be seen in lilies originating up and down the East Coast and far into the West. Not only has he given the lily world some of its finest Asiatic lilies, he has provided the means by which others could create their own. Pollen from a Windus seedling crossed on 'Panamint' produced the white out-facing seedling that was judged most advanced seedling and Best in Show at the 1984 MARLG Show at Horticultural Hall.

When the 1985 NALS Show is held on June 28-30 at the Valley Forge Holiday Inn in King of Prussia, the PHS Gold Medal Certificate will be awarded to the best stem of the Windus lily in the show. Competition will be keen, and this show will be a fine opportunity to see the Windus lilies grown to perfection.

Kathryn Andersen, current president of Mid-Atlantic Region Lily Group, is also on the board of the North American Lily Society, where she serves as liaison with the Royal Horticultural Society. She is second vice-president of the American Daffodil Society and has a strong interest in chrysanthemums. Andersen holds a Ph.D. in chemistry.

A Dozen Favorite Windus Lilies

Registered Name	Color	Spots	Bloom Pose	Height	Season	Outstanding Features	Availability*
Ambrosia	soft apricot over ivory	none	out	3 ft.	mid-June	unique fawn-buff shade	yes
Dawn Star	pale yellow to cream	very few	out	3-4 ft.	late June	ivory lily with pale yellow tips and center, good grower	yes
Evensong	yellow, red reverse	many	out to down	3-4 ft.	July	Hornback award for breeding advance	no
Gold Lode	yellow, gold blush	few	up	4 ft.	late June	A.M. in US, best in Liliade, Netherlands as 'Golden Melody'	yes
Hermes	yellow	few	out	4-5 ft.	late June	sold as 'Atlas,' very vigorous	yes
Kismet	brilliant orange, brown ribs on reverse	none	up	4-6 ft.	mid-June	stunning color accent, stem bulbils, vigorous	yes
Kite	yellow and pink	some	out	4 ft.	late June	distinctive yellow lily with red throat, pink petal tips, vigorous	no
Lime Ice	soft yellow, opens green	none	up	4-6 ft.	early July	cool green stands out in garden, very vigorous	yes
Mary's Magnificent	yellow	heavy	up	2½ ft.	June	center spots create pattern, much substance	no
Mirage	red center yellow tips	none	up	3 ft.	late June	striking color contrast, best reverse available	yes
Powder Puff	ivory	few	up	3 ft.	late June	very wide petals, best seedling in Potomac show, good parent	no
Red King	red	some	up	3 ft.	late June	flat flowers with silver edges, prolific	yes

*Borbeleta Gardens, 10078 154th Avenue, Elk River, MN 55330

A NEWLY CONSTRUCTED CITY GARDEN

The International Garden at Franklin Town: *A proving ground for plants in the city*

 by Paul W. Meyer

Pessimists say that plants have a difficult time growing well in the city. The problems are well known: air pollution, drought, reflected heat and poor soil. But every garden site has its disadvantages and far too often we use the difficulties of urban gardening as excuses when poor horticultural planning and practices are the real problems.

Beginning in 1976, the Morris Arboretum became involved in a number of urban horticultural consulting assignments in high use urban areas. Time after time, plant pathologist Ann Rhoads and I found that many problems occurred because people failed to provide the basics for plant growth. Far too often the planting design and plant selection ensured eventual failure. We were being consulted too late, once the damage had been done. If only we could get involved early in the design process, we could help plan better grow-



photo by Stephen Pearson

White-flowering *Magnolia kobus* underplanted with daffodils brighten the garden in early April.

Grasses are particularly useful in a young garden because they establish quickly and form mature clumps in just two seasons. Thus, grasses can give new gardens a lush, mature appearance while slower growing trees and shrubs are still being established.

ing environments and select plants appropriate for particular sites.

In 1980 we had an opportunity to test urban planting theories. A site covering almost one half of a city block at 16th and Vine was to be developed as an International Garden by Franklin Town Corporation. The garden would provide a setting for the new Franklin Plaza Hotel and Smith-Kline Beckman tower. The international theme would focus on the worldwide diver-

sity of plants that can grow in an urban environment.


planning minimizes problems

The Morris Arboretum staff served as consulting horticulturists on this development project. We wanted to provide the best possible environment for plant growth and to select a rich variety of plant species well adapted to the site conditions. Landscape architect George Patton designed broad serpentine berms to surround a free-form central plaza. The berms were made from clean, friable, sandy subsoil. One inch of peat moss and one inch of well-rotted leaf mold were tilled into the upper six inches of soil to provide deep, rich soil conditions. Planting areas were then mulched with three inches of shredded bark to conserve moisture, discourage weeds and to insulate the soil from extreme temperature fluctuations.

The very nature of the undulating mounds ensure good drainage, alleviating one common urban stress factor. The berms are large enough to accommodate prolific root growth and a built-in sprinkler system provides water when needed. Plants are clustered on the berms to create favorable microclimates for plant growth. Each cluster consists of tall shade trees, smaller understory trees and shrubs, and a ground layer of herbaceous plantings. The plants in these stratified clusters provide cooling shade and wind protection for one another.

Another critical factor to the long term overall health of the garden is species diversity. The sheer variety of plants builds an inherent resistance to unforeseen insect, disease or environmental problems. If one species is affected, the others can grow in to take its place. Monoculture, the

continued



Annuals provide a bright splash of color in the central display beds.

growing of only one or a few species, is far too common in today's urban gardens and plazas. Monoculture is the equivalent of putting all your eggs in one basket. One severe insect or disease problem, which over time is almost inevitable, can wipe out an entire single species planting.

some outstanding urban successes

The International Garden is far too diverse to describe all the plants, but a few represent special successes. Flanking the entrance to the Asian section is a grove of Sawara falsecypress *Chamaecyparis pisifera*. This Japanese conifer was a common foundation plant decades ago but fell

out of favor as people learned that it can grow to 60 feet after 50 years. Today, it has an important use as a tall screening tree. It is adaptable, transplants readily, and thus far, it has been trouble-free at Franklin Town. It makes a good substitute for Canada hemlock, which is troubled by heat, air pollution, and a variety of insect problems.

The striking form of the umbrella pines *Pinus densiflora* 'Umbraculifera' has attracted the attention of many garden visitors. The twisted trunks and umbrella-like canopy give each plant a sculptural quality. These are seldom seen in the city but when given good soil conditions, they

thrive.

The dawn redwood *Metasequoia glyptostroboides* is another conifer very much at home in Franklin Town. This prehistoric species has tolerated the ravages of 60 million years of climatic changes. Thus, like *Ginkgo*, it survives and easily adapts to the idiosyncrasies of urban life. I have seen the dawn redwood used successfully as a street tree in Korea. The three plants in the International Garden are not only surviving, but growing with abandon. This Franklin Town test indicates it might have similar potential for Philadelphia.

Several cultivars of butterfly bush, *Buddleia davidii*, are planted throughout

CITY GARDEN

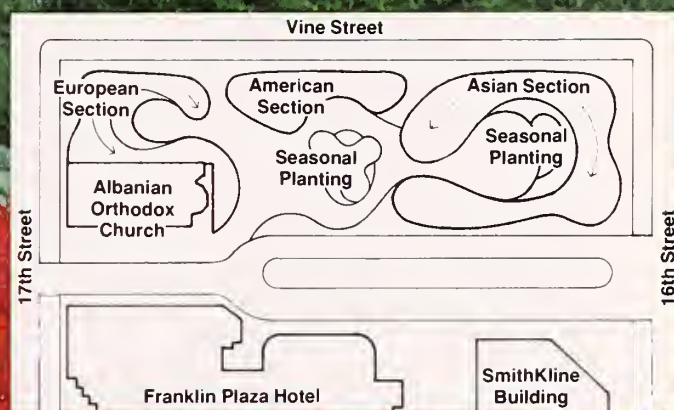


photo by Paul W. Meyer

the Asian section. This shrub, which has a tendency to become rangy, is easily cut back to 10 inches above the ground each spring. New growth proliferates, bearing spikes of flowers from late July until September. By the time it flowers, the shrub has grown to a height of 5 to 6 feet. As the common name implies, these flowers attract butterflies, even at 16th and Vine.

colorful ground covers

A number of herbaceous plantings are used in mass as ground covers. They create a rich mosaic of color and texture and effectively crowd out weeds. Several are particularly popular with Arboretum

gardener Margie Robins, who tends the International Garden. The star performer, thus far, is the Goldsturm black-eyed susan *Rudbeckia fulgida* 'Goldsturm.' This cultivar is truly perennial and when planted 18 inches apart, quickly knits together to form a solid ground cover. It has lush green foliage in the spring, golden daisy-like flowers in the summer, and interesting black seed heads in the fall and winter. The flowers are so dense and vibrant that they can be easily spotted across six lanes of traffic by anyone driving west on the Vine Street Expressway. Also, they can be underplanted with daffodils to provide spring color. Later in the season the

emerging *Rudbeckia* hide the yellowing daffodil foliage.

In the Asian gardens, hostas, liriopse, and daylilies provide an interplay of flower colors and leaf texture. Again, they are planted on relatively close centers so they will grow together quickly to form a dense ground cover. This not only gives a lush feeling to the garden but also helps to control weeds. My favorite is *Hosta* 'Royal Standard.' This hybrid selection has bright apple green leaves and fragrant, white flowers from August through mid-September. In the first years, we had some problems with leaf scorch but as the overhead canopy grows in to shade the hostas, the

continued

problem is disappearing.

lush grasses

Ornamental grasses have been used in profusion, as well. Though virtually unknown in American gardens until a few years ago, they have long been successful in city parks and gardens throughout Germany. They make an effective tall ground cover in particularly hot, dry, sunny areas. As a group, the grasses are relatively free of insects and diseases and are the outstanding performers at Franklin Town. The only regular maintenance they require is an annual cutting early each spring.

Grasses are particularly useful in a young garden because they establish quickly and form mature clumps in just two seasons. Thus, grasses can give new gardens a lush, mature appearance while slower growing trees and shrubs are still being established.

For rapid growth few plants can surpass the giant reed *Arundo donax*. Though it tolerates poor, dry soil, with extra fertilization and watering, giant reed may grow to 15 feet by the second year. Its rich, blue-green foliage has a tropical look and the showy seed plumes persist well into the winter.

Feather reed grass, *Calamagrostis epigeous*, is another grass that attracts the attention of visitors. This clump forming species' growth habit is upright and from a distance, masses of feather reed grasses look like a wheat field. At Franklin Town it is used effectively as a background for black-eyed susan.

The International Garden of Franklin Town is constantly evolving. Like any garden, plants grow and conditions change. Some plants are eliminated and others are added. Certain concepts work well and are expanded upon, while others do not and are eliminated. In short, the International Garden is gardened and not just maintained.

For Franklin Town Corporation, the garden provides a lush setting for its office and hotel and an effective buffer from the glare and noise of the Vine Street Expressway. For the Morris Arboretum, the garden is a living classroom and laboratory where staff and students alike can learn more about how plants grow in the city. The garden is open daily to visitors and the plants are labeled.

Sources:

Many of the unusual plants in the International Garden at Franklin Town were obtained from the following sources:

Specimen conifers

Halka Nurseries, Inc.
R.D. #2, Sweetmans Lane
Englishtown, NJ 07726
Tel: 201-462-8450

Ornamental grasses and herbaceous perennials:

Kurt Bluemel Inc.
2543 Hess Road
Fallston, MD 21047
Tel: 301-557-7229
Bluemont Nursery
2103 Bluemound Road
Box 219
Monkton, MD 21111
Tel: 301-329-6226

The International Garden of Franklin Town is a development of Franklin Town Corporation. Madeline Butcher and William M. Klein provided the inspiration for the garden. George Patton, Inc., was the landscape architect and Heyser Landscaping, Inc., installed the Garden. The staff of Morris Arboretum of the University of Pennsylvania served as horticultural consultants and Arboretum horticulturist Margie Robins continues to garden the site.

Paul Meyer is the assistant director at the Morris Arboretum of the University of Pennsylvania. He is especially interested in the use of plants in urban landscapes. Meyer recently returned from a plant exploration trip in Korea with seed of many new candidates for urban plantings.

The Most Successful Plants at International Garden of Franklinton

Trees:

<i>Acer rubrum</i>	Red maple
<i>Carpinus betulus</i>	European hornbeam
<i>Cedrus atlantica</i> 'Glauca'	Blue atlas cedar
<i>Chamaecyparis pisifera</i>	Sawara cypress
<i>Juniperus virginiana</i>	Red cedar
<i>Magnolia kobus</i>	Kobus magnolia
<i>Malus hupehensis</i>	Tea crabapple
<i>Malus sargentii</i>	Sargent crabapple
<i>Metasequoia glyptostroboides</i>	Dawn redwood
<i>Pinus bungeana</i>	Lace-bark pine
<i>Pinus densiflora</i> 'Umbraculifera'	Tanyosho pine
<i>Pinus thunbergiana</i>	Japanese black pine
<i>Prunus sargentii</i>	Sargent cherry
<i>Quercus robur</i>	English oak
<i>Sophora japonica</i> 'Regent'	Regent Chinese scholar tree
<i>Stewartia koreana</i>	Korean stewartia
<i>Styrax japonicus</i>	Japanese snowbell

Shrubs:

<i>Buddleia davidii</i>	Butterfly bush
<i>Clethra barbinervis</i>	Japanese white alder
<i>Ilex verticillata</i>	Winterberry
<i>Viburnum plicatum</i> 'Tomentosum'	Double-file viburnum
<i>Yucca filamentosa</i>	Adam's-needle

Herbaceous Plants:

<i>Artemisia schmidtiana</i> 'Silver Mound'	Silver mound wormwood
<i>Arundo donax</i>	Giant reed
<i>Calamagrostis epigeous</i>	Feather reed grass
<i>Chionodoxa luciliae</i>	Glory of the snow
<i>Colchicum autumnale</i>	Autumn crocus
<i>Dicentra spectabilis</i>	Bleeding heart
<i>Erianthus ravennae</i>	Ravenna grass
<i>Helianthus maximiliani</i>	Maximilian sunflower
<i>Hemerocallis</i> spp.	Daylilies
<i>Hosta</i> 'Royal Standard'	Royal standard hosta
<i>Iris sibirica</i>	Siberian iris
<i>Liriope muscari</i>	Big blue lilyturf
<i>Liriope spicata</i>	Creeping lilyturf
<i>Miscanthus sinensis</i> 'Gracillimus'	Eulalia grass
<i>Narcissus</i> spp.	Daffodils
<i>Pennisetum alopecuroides</i>	Fountain grass or Chinese pennisetum
<i>Rudbeckia fulgida</i> 'Goldsturm'	Goldsturm black-eyed susan
<i>Scilla sibirica</i>	Siberian squill

The William Paca Garden in Annapolis Steps Back in Time

 by Amalie A. Ascher



photos by M. E. Warren, courtesy of Historic Annapolis, Inc.

Flower parterre in late spring at William Paca Garden.

Reconstructing a garden as it was two centuries ago is no easy task without plans or records to guide you. So you look for bits of evidence, fit them together and speculate.

That's how it's been with the gardens of William Paca, signer of the Declaration of Independence and Governor of Maryland from 1783 to 1785. He created the gardens on his estate in Annapolis in 1765 soon after his first marriage to Mary Chew. But the notes he made describing the landscape were destroyed when the Eastern Shore residence to which he moved burned down.

In time the gardens, said in their day to have been "the most elegant in Annapolis," were also lost, plowed under like a lost civilization giving way to urban renewal. In their place rose a parking lot, a bus station and Carvel Hall, a fashionable hotel named after a mansion in a popular novel of the era. The hotel absorbed William Paca's house as a lobby.

A hotel equipped with an antiquated heating system and 20 bathrooms to serve 200 rooms, soon becomes obsolete. In 1965, it too joined the roster of fond memories, clearing the space for something else to occupy. Should the replace-

ment be a bow to the future or a revival of the past?

To prevent the erection of a high rise apartment office building that would have been out of character with the old-world surroundings, Historic Annapolis, Inc., bought the portion of Carvel Hall that was the Paca House, while the State of Maryland purchased the remaining property. With the demolition of the Carvel Hall annex, the Maryland Historical Trust began the job of reconstructing the gardens, which Historic Annapolis now manages for the state.

continued

Box parterre looks towards holly parterre; potted red tulips sparkle in spring.

Kitchen garden taken through the arbor. Naval Academy Chapel dome rises in background.



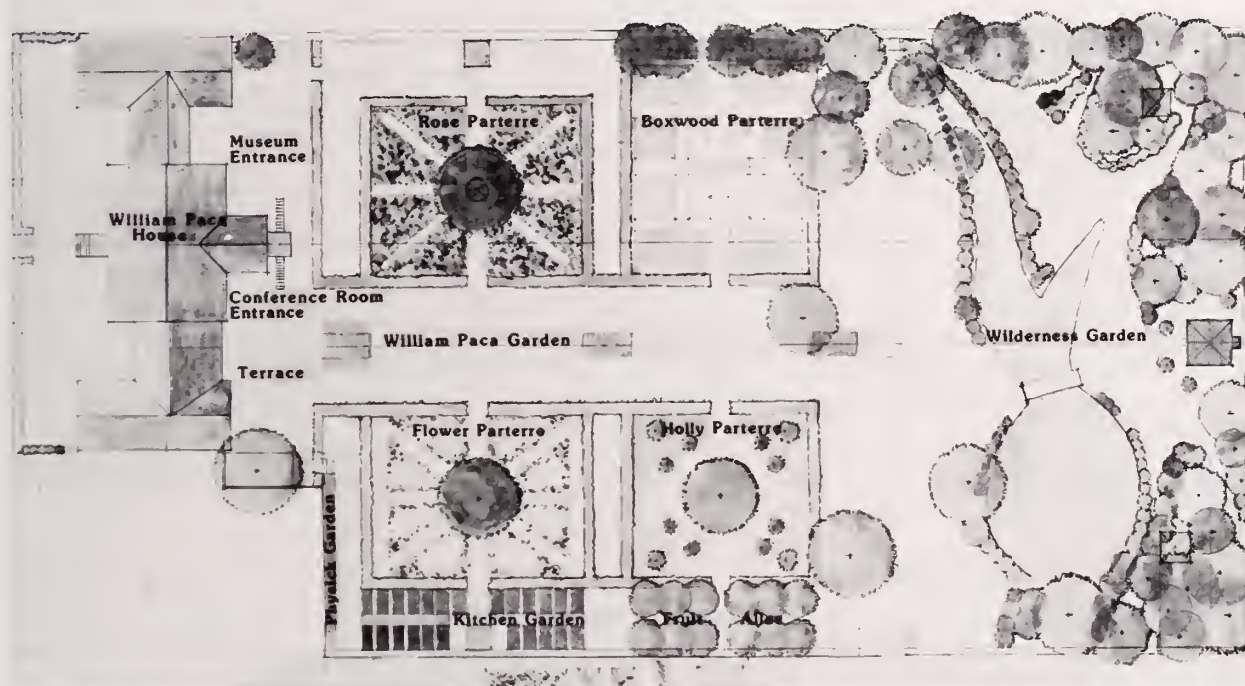
digging for answers

What had the gardens been like? Supported by federal, state and private funds, a search began to yield some answers. Researchers feared that no remains were left under the rubble. But excavation uncovered portions of a wall buried 9 feet deep that had enclosed the gardens. "At each place where the wall dipped, we knew we had a terrace," said St. Clair Wright, chair of the board of Historic Annapolis, Inc. and chair of the William Paca Garden committee. Digging also unearthed the presence of a pond and a system of underground spring boxes and water conduits.

A portrait by Charles Willson Peale of William Paca standing in front of his garden, and other memorabilia documented the existence of a classical two-story octagonal pavilion with a statue of Mercury crowning the peak of the dome. "The garden was, and is today, laid out according to the best principles of English design," Wright said. Its picturesque style was the height of fashion in England when William Paca visited there in 1761.

A pavilion, Wright explained, was used as an architectural feature that from the inside afforded a vista of the garden and beyond. When seen from the house, a

WILLIAM PACA HOUSE & GARDEN



pavilion served as a focal point for the garden. Sometimes called a temple or pleasure house, the pavilion was said to be the province of male family members and guests, a retreat for playing cards or taking meals.

a wilderness area

In front of the pavilion in the Paca Gardens is a wilderness area containing a pond, narrow channels of water and native plants like swamp magnolia, dogwoods and viburnums. Eventually, the area is planned as a preserve for endangered plants as well.

In English gardens of the 18th century, said Lucy Coggin, a horticulturist and researcher on the William Paca Garden staff, the wilderness area was sometimes used for collections of botanical specimens brought to the New World. These new and unusual plants fascinated the gentlemen of that era.

In contrast to the mathematically precise geometric layout of the rest of the garden, the wilderness area followed serpentine lines, reflecting oriental influence. Coggin attributes the style to developing interest in Chinese gardens inspired by reports of travelers. Then too, she said, the filtering in of Far Eastern ideas suggests that people

were beginning to react against rigid formality. The Chinese Chippendale railing of the bridge crossing the pond also indicates a preoccupation with Oriental taste.

On a large 18th century English estate, the wilderness area would have been set off by itself to avoid having it come in conflict with an otherwise geometric plan, but because space was lacking in the two-acre Annapolis garden, it is located at the foot of the grand five-terraced allée.

To agree with the off-center design of the house, terraces in the Paca gardens are split into unequal divisions on either side of the limestone steps and gravel path that cut through the heart of the landscape and form its central axis. Still, formal symmetry prevails through the balanced scheme of the plantings. A series of terraces, Coggin says, was a basic element of 18th century gardens, and the influence can be observed in the Tidewater region as well.

Two 6-ft. high juniper hedges mark the edges of the allée and at the same time serve as an outside wall for parterres concealed behind them. There are four parterres, or room-like enclosures, each featuring a different composition. One is devoted to old roses, another to seasonal flowers, while the other two hold topiaries of boxwood and hollies.

Off to one side of the property is a kitchen garden, illustrating the kind of vegetables, fruits and herbs a family in the colonies might have raised to feed itself. "William Paca had no corner grocery store to run to," Wright observed.

Throughout the garden, plants exemplify types that were known if not grown by settlers in 18th century Annapolis as well as species indigenous to Maryland. Two full-time gardeners, Richard Moxley (the superintendent) and Wayne Turcotte look after the garden assisted by extra helpers in the summertime.

Visitors will find the William Paca Garden a very special place because it illustrates landscape designing of the highest order. A stroll along its paths gives a glimpse into life of another day.

The gardens of William Paca House, a National Historic Landmark, are at King George and Martin Streets in Annapolis, Maryland 21401. Hours are 10 am to 4 pm, Mondays through Saturdays. Sunday hours are noon to 5 pm from May through October and noon to 4 pm from November through April. The gardens are closed on Thanksgiving Day and Christmas Day. Admission fees range from 75 cents to \$1.50. For more information, call 301-267-6656.

Amalie Ascher is a frequent contributor to *Green Scene*.

SHELL BEANS

 by Walter Chando

24

French Horticultural shell beans.

All varieties of beans can be picked in their mature "beany" stage, then shelled and eaten green, or dried for storage for winter meals.

Conversely, most beans can be harvested in their immature "snap" bean stage and eaten pod and all. But just as a truck can be used to haul passengers, and a car can carry cargo, each is better used for its designated purpose.

It's the same with beans. Certain varieties were developed for specific uses. Shell bean pods all mature at about the same time, while snap beans come to maturity over an extended period of weeks, even months. If you want snap beans grow

Kentucky Wonder, Blue Lake, Dandy or something similar. But if you want shelled beans to eat in their green stage or to dry for storage, grow varieties bred for shelling like kidney, navy, pinto or Jacobs cattle.

Of all the shell beans I like French Horticultural best because it is the most colorful. As the pods mature they turn from green to deep pink with white streaks. Then there's another surprise – the beans are creamy white speckled with pink. That the beans are tasty is a bonus.

This bean has a minor fault: it's neither a bush bean nor a climber; it's what growers call a semi-runner. It starts its growth like a bush bean, then depending on the soil's

fertility, 12-in. - 15-in. runners pop up above the 15-in. - 18-in. bushes. When I first planted them I thought the grower mislabeled the package and sent me pole beans. Most of the runners didn't go a foot above the foliage; they intertwined and became somewhat self-supporting.

Since the total height of the foliage of French Horticultural beans is not much over 30 in., I plant these as I do all bush beans. They're planted in parallel rows a foot apart in raised beds around 4 ft. wide. Beds are limed in the fall, and in the spring a couple of inches of compost and/or rotted horse manure is worked in, then raked smooth. A line is stretched 15 in. - 18 in. in



photo by Walter Chandoha

leaf out the ground underneath is shaded eliminating the need to weed.

- Support. Closely planted rows tend to support each other, especially half-runners like the French Horticultural bean.

Bean seeds rot in cold soil, so it's best to wait until temperatures are up in the 60s before planting. Here in northwest New Jersey, I can safely plant beans in my raised beds around May 10; in the flat garden I'd have to wait 10 more days. Because they're elevated, raised beds lose frost, dry out and warm up sooner than flat gardens.

After they are up and growing about 3 in. -4 in. high they get their first cultivation to keep the beds weed-free. As I cultivate I hill the soil up toward the plants. When they start to flower, scratch fertilizer (5-10-5 or equivalent) into the soil on either side of the plants, which should be watered weekly if there's no rain.

Like snap beans, shell beans can be eaten pod and all when they are young, tender and immature. Better yet, let the beans get fat in the pods. At that point, you have two choices. The first, the fat succulent beans can be shelled and eaten while young; simmer gently in butter, add salt and pepper to taste plus the herb of your choice. The other choice is to let the beans dry in the pod. If it's a later end-of-the-season planting I let the pods dry on the vines where they grew. But for early plantings where garden space is needed the pods are pulled and spread out in the barn for further drying.

Once beans are dry they're easy to shell. Nature partially does the job. As the pods dry they split along the seam exposing the seeds inside. But if you have a bumper crop put the pods in a sack or pillow case and beat them. This smashes the dry pods and releases the beans. Empty the sack into a shallow basket or a garbage can lid on a windy day and winnow them. The wind carries away the lighter chaff, and you're left with beans *almost* ready for dry storage.

There's one more step. Sometimes dry beans harbor weevils. To preclude their damage, freeze the beans for a couple of hours or overnight. Freezing kills the critters. Now they can be shelf-stored indefinitely until eaten. I store them in jars.

Apart from the weevils, beans have one other major enemy — the Mexican bean beetle. The highly visible adult can be hand picked and destroyed. If the brown-spotted adults are caught early you won't have to worry about the hairy yellow larva, which do most of the damage. Should they appear, squash them on the plant. Even better, look for the tiny yellow egg clusters on the underside of the leaves and crush these before they hatch.

If the bugs get ahead of you, despite hand-picking and crushing, a dusting with Rotenone effectively eliminates them. Let the birds help too. Years ago when my garden was adjacent to an open field I had lots of bean beetle damage. But now that the evergreen windbreak parallel to my garden is big enough to shelter birds, noticeably fewer bugs eat my vegetables and flowers.

Now if only I could solve the problem of deer. Beans of all kinds are high on their list of favored foods. Yes, fencing could keep them out but since my garden is also my outdoor photography studio I'd rather not resort to an 8-ft. fence. The only effective solution so far has been to cover vulnerable plantings with half circles of wire mesh fencing that can be easily removed when photographs are made. It works but it's a nuisance.

Sources:

Stokes Seeds
Buffalo, NY 14240
(My seeds came from here.)

Harris Seeds
Joseph Harris Co.
Moreton Farm
3670 Buffalo Rd.
Rochester, NY 14624

Vermont Bean Seed Co.
Garden Lane
Bomoseen, VT 05732

●
A free-lance writer/photographer for over 30 years, Walter Chandoha's illustrated gardening stories have appeared in the *New York Times*, *Family Circle*, *Organic Gardening*, *Ladies Home Journal*, *Woman's Day*, *Horticulture*, *House & Garden*, *Family Food Garden*, *Flower & Garden*. In 1982 he won one of two of the National Garden Bureau Awards. Some readers may know Chandoha for his animal photographs, especially his cat and dog photographs that have been used to illustrate pet food packages and advertising, books and magazines, and over 200 magazine covers.

from the edge of the bed and a seed is pushed into the soil about every 2 in. about an inch deep. The line is moved one foot and a parallel row is planted. Compost is sprinkled over the holes to cover the seed then they're snuggled into the soil by covering the row with a board and standing on it. Then the bed is watered.

Why two close rows? Especially since most catalogs suggest planting bush beans in rows 18 in. - 30 in. apart. Three reasons:

- Saves space. With fertile soil, closely planted crops yield as much as widely spaced crops on less nutritious soil.
- Weed control. When the bean plants

Four Favorite Perennials for the Shady Garden



by Elizabeth B. Derbyshire



Begonia grandis

photo by Elizabeth Derbyshire

26

After reading last July's issue of *Green Scene*, "All About Perennials," I was left with the impression that sun-loving plants were emphasized. A good number of us, however, must deal with gardens that are to a greater or lesser extent in shade. For 17 years I've been growing plants in a woodland garden, and I nominate these four favorites for the shady garden:

Barrenwort, *Epimedium* sp. Likes open or light shade, blooms in May-June, 6 in.-12 in.

Goatsbeard, *Aruncus dioicus*. Likes open shade, blooms in June-July, 2 ft.-3 ft.

Bugbane, *Cimicifuga racemosa*. Likes light shade, blooms July-August, 2 ft.-3 ft.

Hardy begonia, *Begonia grandis* (Evan-siana). Likes open shade, blooms September-October, 1½ ft.-2 ft.

How do you define shade? Obviously, I'm not talking about dense shade, for

example under hemlock trees, which never allow sunlight to penetrate to the ground. I refer to two conditions: light shade and open shade. By light shade I mean areas that receive dappled sunlight under mature leafy trees such as tulip or oak, and that usually receive two to three hours of low angle, e.g., later afternoon, sun each day. Open shade, on the other hand, is an area that receives open light, is shaded from the sun by trees or buildings, but that may also receive direct overhead sun for two to four hours each day. Many of us can think of sections of our gardens that provide either of these two conditions.

epimedium

Epimedium, a member of the barberry family (Berberidaceae), is a native of both southern Europe and Japan. It proves its worth throughout the year, and it is my

candidate for a blue ribbon winner. In the spring garden the delicate orchid-like, dainty racemes of flowers on the slender stem provide a variety of color from white, mauve, yellow and red depending on the species. The uncurling heart-shaped leaves of light green and bronzy tan further enhance the overall beauty of the varieties. Even in summer the texture of the leaves varies according to species. They appear to withstand the summer heat and drought, although after blooming I apply a mulch of compost to keep the soil cool and establish a good root run to maintain the plants in a healthy condition. They are free of pests and diseases. They grow well in a good friable soil and benefit from a side dressing of dried cow manure in early spring. Epimediums are best propagated vegetatively immediately after flowering.

In fall the foliage changes from soft rus-



Epimedium pinnatum. This excellent ground cover and accent plant in the rock garden deserves a higher priority as a shade tolerant perennial in our gardens.



Cimicifuga racemosa 'White Spires'

set into reds, tans, and browns, an additional bonus in the colorful fall landscape. Sometimes the foliage persists into winter. When snow covers the ground it creates a pleasing contrast to the landscape.

goatsbeard

The tall goatsbeard (*Aruncus dioicus*) derives its common name from the plume-like white flower that resembles a goat's beard (the Greek, *ar-runk-us*, goat's-beard). A member of the rose family (Rosaceae) this ornamental perennial makes an attractive background in the garden. It has large pinnate, compound leaves and attains a height of 2 ft.-3 ft. when the panicles of small flowers come into bloom in June. Goatsbeard prefers a humusy rich soil and is propagated easily by seed and by division of the older plants, in September. *Aruncus* is found growing in North

America as well as northern Europe in rich woods.

snakeroot

Black snakeroot or bugbane are just two of the many common names given to this member of the buttercup family (Ranunculaceae). *Cimicifuga racemosa* describes the plant quite aptly as the Latin *cimex*, bug, and *fuga*, flee (bugbane), and *racemosa* describes the spike-like raceme of flowers appearing in June and July, in the summer woodland. The cultural requirements are similar to *Aruncus*, growing best in a humusy woodsy soil in open or light shade. Bugbane is propagated by seed and division of the mature plants in September. It is still listed in the *Guide to Medicinal Plants of Appalachia*, Department of Agriculture Handbook No. 100. The book notes that in Appalachia a tea

made from the root is used to treat a sore throat and the root and rhizome are considered valuable for healing chronic rheumatism. We find this native plant distributed from Maine to Georgia and westward from Ontario to Missouri.

begonia grandis

September and October bring the hardy begonia into bloom with a splash of color. The bright pink flowers and glossy textured leaves give the perennial border a bright new look. Our only hardy begonia does not emerge from the ground until late May and so the eager gardener should be careful not to cultivate in the area where known plants are still underground. Another interesting feature of this plant is its dual means of propagating, by bulblets and by seed. In a mature plant you will find small bulblets growing in the axis of the main stem, the larger bulblets nearer the lower part of the stem. They can be removed gently and dropped into the soil nearby. After flowering, the dried seed can be gathered and sown in February to produce more of this attractive perennial.*

Gardening in a shady garden is a challenge. But the beauty of a well-landscaped garden rests on the contrast of light and shadow filtered over the lawn and garden throughout the year. The list of perennials as nominees for such a design is longer than one might think.

*See *Begonia grandis* (Growing Interests) by George Harding, *Green Scene*, September, 1983, page 34.


Sources

Russell Gardens
600 New Road
Churchville, PA 18966
No catalog
White Flower Farm
Litchfield, CN 06759-0050
Catalog \$5.00 (refundable with first order)
Carroll Gardens
Box 310, 444 East Main Street
Warminster, MD 21157
Catalog free
Rocknoll Nursery
9210 US 50
Hillsboro, OH 45133
Catalog free

Elizabeth Baxter Derbyshire has had a life-long experience as a horticulturist. She has enjoyed working in environmental education at Bowman's Hill Wildflower Preserve and the Morris Arboretum. She has been a field trip leader to the Pennsylvania Horticultural Society and the Wyncote chapter of National Audubon Society.

STRANGE BEDFELLOWS:

Edibles and Ornamentals

 by Bob Hyland



Portulaca 'Sunglow Rose' and Swiss chard.

photos by Bob Hyland

Consider how spring seed catalogs with page after page of flashy four-color photographs condition gardeners to segregate plants into two distinct groups – edibles and ornamentals. A ripe, juicy tomato is seldom pictured on the same page as an old-fashioned hollyhock or a red-twig dogwood.

Catalogs contribute to the dilemma some gardeners have with limited space by suggesting they either grow something to eat or something of beauty. Subliminally, by their choice and arrangement of pictures, catalogs encourage suburban gardeners to banish the food patch to a

By reaping the bounty, gardeners "eat holes" in the landscape design.

remote corner of the backyard out of sight of the residence.

These conflicts are quickly settled after considering the ornamental qualities of vegetables and fruits. Food crops come in colors, textures, sizes, and forms that can complement and enliven home landscapes on any scale. Beginners might slip mixed plantings of lettuce, spinach, chives, or parsley into the foreground of flower beds or the edge of shrub plantings. More enthusiastic gardeners can easily create exuberant beds of mixed vegetables, flowers, and herbs that rival any traditional floral and shrub border. What some consider strange bedfellows may not be so strange at all.

The only limitations to the success of "edible-ornamental" plantings is your own imagination. Following are suggestions for edible compositions tested in my small urban garden in Wilmington, Delaware and in the Food Gardening Exhibit at Longwood Gardens. Some are subtle and require little design; others are more imaginative but require advance planning and higher maintenance.

in the city garden

My city garden fills a common courtyard behind a U-shaped cluster of renovated rowhouses that are rented as apartments. The enclosed space receives limited sunlight due to the surrounding buildings and shade trees on an adjoining property.

Despite these conditions a colorful garden has emerged from the reconstruction rubble. It is aesthetically pleasing, and also yields small quantities of seasonal vegetables to be shared among tenants.

A quick and easy "edible-ornamental" combination I've found is to plant lettuce in small groups in a dense shade-tolerant ground cover. Last spring the wavy green loosehead lettuce 'Salad Bowl' erupted through a uniform bronze mat of bugleweed (*Ajuga reptans* 'Bronze Beauty') to provide a striking color and textural contrast. Positioned near the front of the garden the lettuce was evident to inexperienced gardening tenants and accessible for easy harvest. For the fall season I planted 'Green Curled' endive in mid-July to have a similar plant composition in September. Adjacent ornamental plants that helped orchestrate this planting were coralbells (*Heuchera* 'Chatterbox'), ribbon grass (*Phalaris arundinacea* 'Picta'), and an unnamed scarlet daylily.

In a sunnier part of the garden I established a broccoli, ornamental grass, blackberry-lily, and spider-flower combination. The coarse texture and iridescent blue-green cast of the broccoli leaves provided a bold contrast to the narrow-leaved grasses. I selected broccoli variety 'De Cicco' because of its heat tolerance and

continual side shoot production after harvesting of the central head.

Surrounding the broccoli were three clumps of fountain grass (*Pennisetum alopecuroides*) and one of the taller cord grasses (*Spartina pectinata* 'Aureo-marginata'). Scattered fans of blackberry-lily (*Belamcanda chinensis*) and spider-flower (*Cleome spinosa* 'Helen Campbell') poked through the grasses with bursts of orange and pink.

at longwood gardens

On a grander scale at Longwood Gardens, we combine edible plants more liberally with ornamental shrubs and flowers. Intensively cultivated, mixed beds create a colorful patchwork design on a simulated suburban lot. It is not this full-scale Longwood design we envision homeowners duplicating, but rather the simple two- and three-plant combinations.

One popular edible plant composition highlights the widely grown tomato. The scheme begins with a bedding nasturtium (*Tropaeolum majus* 'Whirlybird') in mixed hot colors that informally spills onto a garden path. Poking here and there above the masses of edible blossoms are the sword-like leaves of leeks, their shanks blanched below the nasturtium foliage.

Directly behind rises the compact toma-

continued



Hyacinth bean, purple miscanthus and Swiss chard.

to variety 'Better Bush,' a recent Park Seed Co. introduction that requires no staking. A taller back-of-the-border tomato 'Sweet 100' develops attractive sprays of delicious, bite-size fruits not unlike clusters of grapes. Towering five to six feet behind all of these plants is a coarse, red-stemmed and fruited okra bordered by a fence to prevent it from toppling in rain and wind. Its large, creamy yellow hibiscus-like flowers are as showy as any ornamental and soon transform into equally attractive spined okra pods. For eating they are best harvested when two to four inches long or can be left on the stalks until they turn woody for wonderful fall effect.

Nearby in a corner of the Longwood exhibit is a strange plant association that

Remember, however, that pesticides labeled for ornamental plants are sometimes toxic to edible crops and the people who eat them. Exercise care and read the labels before applying chemicals.

many gardeners overlook. Sweet potatoes are planted at the base of five clumps of Siberian dogwood (*Cornus alba* 'Sibirica'). Above ground, the heart-shaped sweet potato leaves form a ground cover somewhat like the foliage of the perennial *Bergenia cordifolia*. Undetected beneath the soil plump tubers store energy during the growing season. Cool nights in September tinge the sweet potato foliage pinkish-purple to harmonize with the coral red dogwood stems exposed at ground level.

One of my favorite mixes of vegetables and ornamentals in the same bed is swiss chard, portulaca (1985 is designated Year of the Portulaca by the National Garden Bureau), a variety of miscanthus, and the annual climbing hyacinth bean. The succulent, day-blooming *Portulaca grandiflora* 'Sunglow Rose' is an excellent horizontal foil for the vertical white stems and crinkled green leaves of the 'Lucullus Light Green' chard. A brilliant red-stemmed rhubarb chard is also available and a worthy substitution.

Exaggerating the upright form in this composition is the cultivated grass, *Miscanthus sinensis* 'Purpurascens.' Its foliage assumes a reddish-purple cast in late summer and is synchronized beautifully with a background screen of glossy burgundy pods dangling from the vines of hyacinth bean (*Dolichos lablab*). This

attractive bean is easily shelled for drying or fresh cooking.

maintenance – a plan for balance

Describing "edible-ornamental" compositions is easy, but maintaining them does present some problems. By nature many vegetables are quick to mature and are harvested just at the time they look their best. By reaping the bounty, gardeners "eat" holes in the landscape design.

To hold the edible landscape together, I use a staggered planting of a cool season vegetable like the broad-leaved spinach 'Bloomsdale Longstanding' and the annual cutleaf 'Silverdust' dusty-miller. This composition gives alternating patches of silver-gray and dark green. At the front of a border, the nutritious spinach is picked until warmer weather forces the crop to bolt. Hotter temperatures signal the dusty-miller to fill out and assume the vacated space.

A combination of beets and sweet alyssum (*Lobularia maritima*) works the same way. The dainty pink blossoms of the cultivated variety Royal Carpet put on a good show with the bolder, red-veined beet greens. Plants will gradually spread to cover depressions left by the harvested beets.

Changing your harvest methods will also prolong mixed plantings. Avoid plucking a whole head of lettuce or the entire plant of

spring and fall greens at one time by frequently picking outer leaves as they are needed. I harvest fruiting vegetables continually. Overripened, spoiled fruit encourages attractive plants to decline and stop producing.

a warning

Stressed vegetables are as prone to insects and diseases as their ornamental bedfellows. Remember, however, that pesticides labeled for ornamental plants are sometimes toxic to edible crops and the people who eat them. Exercise care and read the labels before applying chemicals.

Planning "edible-ornamental" plant combinations requires an equal commitment to beauty and food. The edible landscape requires an adjustment in gardening attitudes and as much imagination as you can muster. But the joy of harvesting a plump summer squash next to scapes of bright yellow, tetraploid daylilies is indescribable. There is much to be said for strange bedfellows.



Bob Hyland is a staff member of the Education Department at Longwood Gardens and an enthusiastic city gardener. He has masters degrees in ornamental horticulture from the University of Delaware's Longwood Program and North Carolina State University.

Mail-Order Sources for Strange Bedfellows

W. Atlee Burpee Seed Co.
300 Park Avenue
Warminster, Pennsylvania 18974

Park Seed Co.
Greenwood, South Carolina 29647

Bluestone Perennials, Inc.
7211 Middle Ridge Road
Madison, Ohio 44057

Kurt Bluemel
2543 Hess Road
Fallston, Maryland 21047

Stokes Seeds, Inc.
Box 548, 737 Main Street
Buffalo, New York 14240

Thompson and Morgan
P.O. Box 1308
Jackson, New Jersey 08527

Alyssum 'Royal Carpet'
Broccoli 'De Cicco'
Dusty-miller 'Silverdust'
Nasturtium 'Whirlybird'
Swiss Chard 'Fordhook Giant'
Burpee's Rhubarb Chard

Belamcanda chinensis
Lettuce 'Salad Bowl'
Spinach 'Bloomsdale Longstanding'
Red Okra
Tomato 'Sweet 100' and 'Better Bush'

Ajuga 'Bronze Beauty'
Heuchera 'Chatterbox'

Pennisetum alopecuroides
Phalaris arundinacea 'Picta'
Miscanthus sinensis 'Purpurascens'
Spartina pectinata 'Aureo-marginata'

Portulaca 'Sunglow Rose'

Dolichos lablab
Cleome spinosa 'Helen Campbell'

a shrub divided makes two

 **by Bill Thomas**

I had never thought much about the problems of dividing shrubs until I was moving a sizable azalea alone. I couldn't lift it, even after shaving the soil ball with a garden spade. The saw was my last resort. I cut the plant in half, roots and all and was able to drag the two parts to the new location. Like a living jigsaw puzzle, the two became one again in the planting hole. When I moved other azaleas, my frugality took over. Each division became a separate plant, double the number.

You can divide many shrubs, much as you would divide a perennial. Choose shrubs that transplant readily and have well-distributed roots combined with numerous stems. Suckering shrubs are easiest to propagate because they send up many shoots. This group includes clethras, winterberry hollies, bottlebrush buckeyes and lilacs. One disadvantage is that suckers lack a well developed root system of their own. During the first growing season after division they require light shade and extra moisture to reduce stress while rooting.

Self-layering shrubs are also easy to divide because their stems root where they touch the ground. Examples are red osier dogwoods, forsythias, and fragrant sumacs. Other shrubs, like viburnums, azaleas, flowering quinces, and abelias, divide well as long as there are sufficient roots and stems for the new plants.

Avoid dividing grafted shrubs, ones with few stems, and those that are difficult to transplant. These include magnolias, coniferous shrubs, photinias and rhododendrons.

To divide shrubs in my garden, I use two methods. The easiest is digging a rooted portion from a many-stemmed plant. This works well with young plants and with those that sucker or self-layer. Place a sharp spade between the main plant and what will be the new one and step hard on the spade. Dig the new plant with or without soil on its roots and leave the parent essentially undisturbed.

The other method of dividing is the one I used with the azaleas. The plants were

continued

fairly old, probably installed when the house was built in the early 50s. For each, I dug a trench around the entire shrub and then cut underneath the ball of soil to free the plant from the ground. It was soon obvious the plants were too heavy for one person. Cutting each into two lighter shrubs saved the day.

Before dividing, I removed as much soil as possible. This clarified where to cut, was easier on the saw, and lightened the plant. A spade shaved the soil to where the roots and soil were quite tight. At that point, no more soil could be removed without severely damaging the plant.

Shrubs that have coarser root systems, such as some viburnums, hold soil less tightly. Most of the soil can be removed from their roots with a garden fork or by shaking the plant to dislodge soil.

Make the cut in the center of the plant or along the side, depending on what will produce the best plants. Generally, two or three landscape-sized plants are the most you can get through division.

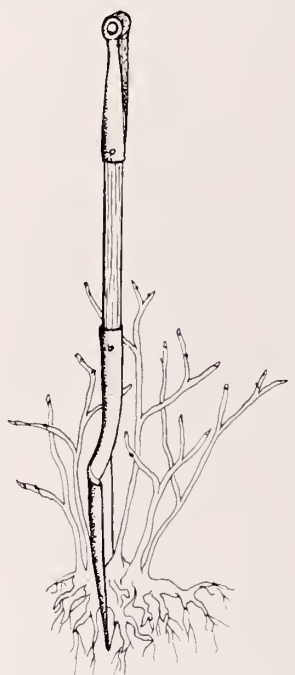
The saw I use is easy to carry because it folds and its curved blade speeds cutting. Since the soil will dull the blade, I use an old saw that already needs sharpening.

Exposed roots dry out easily. To lessen

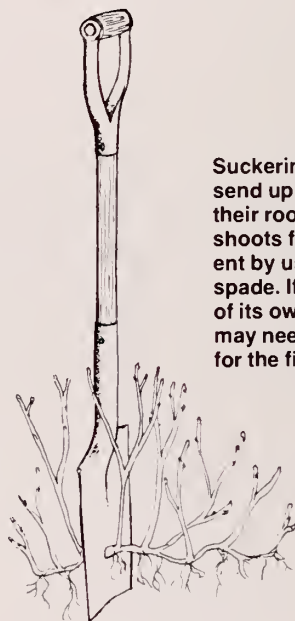
this damage, move only one shrub at a time and replant immediately. Divide only during the dormant season, preferably on cool, cloudy days.

After replanting, some pruning is necessary. Most plants lose roots in the process, and pruning helps restore the original ratio of roots to stems. Estimate how many roots were lost and cut off an equivalent amount of stems. Try to remove stems that cross or compete with other branches.

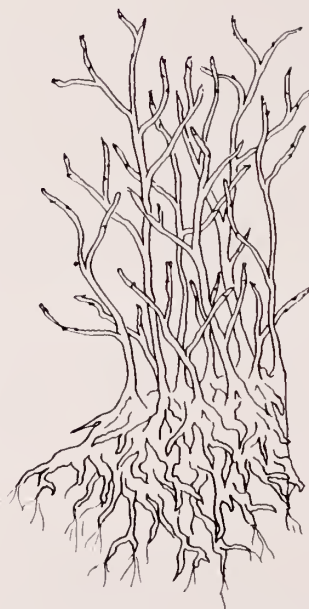
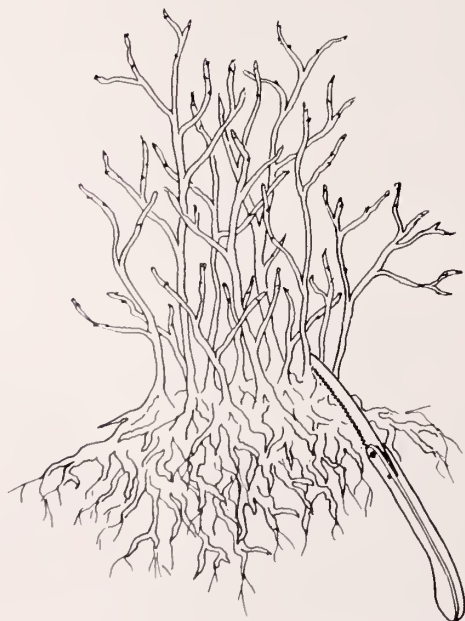
Bill Thomas is assistant department head in the Education Department at Longwood Gardens. Thomas's primary interest is hardy ornamental plants.



With shrubs that are small enough, a sharp spade does the dividing. Make the cut far enough into the parent that the new plant will have sufficient roots and at least one stem. The parent plant does not have to be dug for this method.



Suckering shrubs send up shoots from their roots. Cut young shoots from the parent by using a sharp spade. If without roots of its own, the sucker may need extra care for the first season.



On larger shrubs and on ones that do not sucker, it is best to dig the entire plant and expose as many roots as possible. A saw cuts through the plant.

Spigelia marilandica: A SOUTHERN BEAUTY

 by Claire Sawyers

Perhaps it's because the wildflower enthusiasts' season peaks in early spring and they're catching their breath when *Spigelia marilandica* begins to show off that it's overlooked. This native's obscurity can't be blamed on a shy personality.

An herbaceous perennial, *S. marilandica* begins producing red, red flowers in June, about the time many of the pastel "cliche" wildflowers like bluebells, bloodroot, and spring-beauty quiet down. It forms clusters of tube-shaped flowers above neat and attractive foliage, and as many as seven or eight flowers, each reaching up to 2 in. in length, appear at once atop each stem. Fresh red buds continue to form through the summer right into October. The red boldly punctuates a green background, but once the fused petals crack at the bud tip, five points widen to reveal a surprising butter yellow throat.

Nor can this spigelia's obscurity be blamed on a late discovery by botanists and horticulturists. It crossed the Atlantic nearly 300 years ago (according to *Hardy Plants Introduced to Britain by 1799*) to meet the keen British plantsmen who gave many of our American natives "an education." And the plant made its debut in Curtis's *Botanical Magazine* in 1790 – the magazine "in which the most ornamental foreign plants ... are accurately represented in their colours." Besides displaying a handsome illustration, the magazine reported:

This plant not less celebrated for its superior efficacy in destroying worms, than admired for its beauty, is a native of the warmer parts of North America; the older botanists, even Linnaeus, at one time considered it as a honeysuckle, but he has now made a new genus of it which he has named in honor of Spigellius, a Botanist of considerable note.

(Spigellius was supposedly the first to leave written instructions on how to prepare an herbarium, published in 1633.)

The common names for the plant – pink root, Indian-pink, and worm-grass – allude to the medicinal property mentioned in Curtis's *Botanical Magazine*. An alkaloid

continued



photo by Claire Sawyers

Spigelia marilandica blooms heavily in early summer and continues blooming into October.

extracted from the roots has had "superior efficacy in destroying" intestinal parasites. Besides honoring a botanist, the Latin name for this plant also honors its homeland. *S. marilandica* has been observed growing naturally in Maryland, although in most floras and references its range is usually described as deeper south: from the Carolinas to Florida and west to Texas. Some botanists have also recorded its presence in mid-western states such as Indiana and Missouri. In the wild it generally grows in moist, rich woods.

Although *S. marilandica*'s medicinal virtue may no longer be a selling point, it is a perfect candidate for gardeners today with wildflower gardens or woodland plantings. And just because it is an American native doesn't mean it should be restricted to wildflower plantings. Gracefully, *S. marilandica* grows in sun as well as shade, as long as some moisture is available, so rock gardeners and perennial buffs seeking something special to add to their collections will find a worthy novelty in *S. marilandica*. In fact, at Longwood Gardens, this plant is perched on the slope of the Hillside Garden in full sun. It is content enough there to self-seed. At the Arboretum of the Barnes Foundation, where this plant joins

other natives in the Wherry Garden, it's also in a fairly open, sunny site.

At maturity, *S. marilandica* reaches 1 to 1½ ft. and forms a rounded mound with multiple stems, many of which are unbranched or sparsely branched. Such plants can be covered with flowers. Even when the flowering slackens later in the season, the sessile, opposite leaves held stiffly horizontal and evenly spaced along thin dark stems add textural interest to a planting. Heavy rains can bend the elongated stems in late summer, but that's nothing serious — with gentle shaking or neglect they stand back up.

S. marilandica is rare in cultivation, but it is easy to grow and can be propagated by various means. Seeds require no special treatment, just a moist soil, but the trick is catching them. Most of the flowers are sterile and the few small capsules that do form explode as they mature. To successfully harvest the seeds (without resorting to bagging the stems), check the plant frequently and collect the two-lobed fruits when they break off with a bit of encouragement. Store them in a tight container because the fruits can still explode after they've been so carefully captured. If the seeds do escape you, plants can be divid-

ed spring or fall and usually produce enough stems to be divided within two to three years. For faster results, try cuttings. Robert Mackintosh of Woodlanders, a nursery in South Carolina specializing in southeastern native plants, says that they propagate the plant by cuttings, although only about half root.

Spigelia is a southern beauty that should be shown more hospitality in our Delaware Valley gardens. And although a flirt, donning a hot red, this southerner won't complain about cold northern winters.

Sources

Woodlanders, Inc.
1128 Colleton Avenue
Aiken, SC 29801
(803) 648-7522

It is listed in their 1984-85 catalog with the "odds & ends." Send a self-addressed, stamped, long envelope for a catalog.

Don L. Jacobs
Eco Gardens
P.O. Box 1227
Decatur, GA 30031
Jacobs operates Eco Gardens as an Arboretum, Botanical and Horticultural Gardens, and has unique sampler lists of plants for sale.

Claire Sawyers is a graduate of the Longwood Program and currently the administrative assistant at Mt. Cuba Center, Greenville, Delaware.

the plant finder — A free service for *Green Scene* readers

34



If you can't locate a much wanted plant send your name and address (include zip), the botanical and common name of the plant to Plant Finder, Green Scene, PHS, 325 Walnut St., Philadelphia, PA 19106. People who have the plants or seeds you want will contact you to make arrangements about selling or giving them away, mailing, etc.

WANTED

Averrhoa carambola 'Maher Dwarf' (starfruit), ***Myrciaria cauliflora*** 'William Whitman' (jaboticaba), and ***Garcinia mangostana*** (mangosteen).

Contact: Randy Peterson, Research & Newsletter Editor, Indoor Citrus & Rare Fruit Society, 176 Coronado Ave., Los Altos, CA 94022.

Letters to the Editor

Dear Editor:

From my point of view two articles in the March/April *Green Scene* were truly outstanding.

Elizabeth P. McLean's "Reading Garden Catalogs" finally brought to print what almost everyone with experience in ordering by mail has been thinking for years. It was a joy to see it.

And Charles D. Cresson's "The Art of Pea-staking Perennials" can be of great service to gardeners. I've seen the method used in a number of England's finest gardens and I can confirm that it works like a charm. I can't remember seeing it mentioned before. What a scoop!

George A. Elbert
New York, NY

classified ads

AZALEAS, RHODODENDRON, AND MOUNTAIN LAUREL. Hardy, field grown plants. Reasonable prices. Designer-grower will assist in selection. Foothills of western New Jersey; call or write for directions. **FROG POND FARM**, Beavers Road, R.R. 3, Box 69, Califon, NJ. 201-832-7582

CHRYSANTHEMUM CUTTING SALE

Exhibition and Garden Varieties at reasonable prices will be available by the Delaware Valley Chrysanthemum Society at the Tyler Arboretum, Lima, PA on May 18 and 19 from 10:00 AM to 4:00 PM. Come early for largest selection.

GROWING PLANTS WITH LOVE AND CARE

Since 1968 we have been growing and selecting over 200 varieties of hardy, colorful, and unusual trees and shrubs. We specialize in azaleas, rhododendron, mountain laurel and conifers, especially unusual and dwarf plants. Phone 609-298-8282.

FERNBROOK FARM NURSERY

Lawrence Kuser, owner
Georgetown Rd., Bordentown, NJ 08505

CLASSIC ENGLISH AND AMERICAN GARDEN FURNITURE

Solid teak, iroko, cherry and oak hardwoods — traditional slatted benches, shrub tub planters, contemporary deck chairs, **SWINGS** — Victorian, traditional and contemporary styles. Catalog \$1.00. **COUNTRY CASUAL**, Suite 205, 17317 Germantown Rd., Germantown, MD 20874. (301) 540-0040.

HERB WEEK, free demonstrations on growing, drying and crafting with herbs, free tastes of herb tea, butter and dip; over 200 herb plants available, formal herb garden, May 16, 17, 18, 19. Programs 1:30 to 3:30 each afternoon.

Triple Oaks Nursery and Florist

S. Delsea Drive, Franklinville, NJ 08322
609-694-4272

Complete Lawn and Gardening Maintenance

(Grass Cutting)

Shrubs Fed and Trimmed

John J. Galante

104 Atwood Road

Erdenheim, PA 19118

836-5622 • 836-5739

MEADOWBROOK FARM

Let us inspire you with our unique selection of rare plants, fountains and statuary. Your garden will never be the same. Our dedicated staff will help you select from over 300 varieties of perennials for sun, shade or ground cover. Rare trees and shrubs. Try our uncommon varieties of annuals. See them growing in our new display garden. In our greenhouses: rare exotics and flowering plants for gifts and centerpieces, topiary. Custom and specialty orders welcome. 12 miles from center city. Wholesale, retail.

"More than just a greenhouse."

1633 Washington Lane
Meadowbrook, PA 19046
887-5900

LAUREL HILL GARDENS

8125 GERMANTOWN AVE.

CHESTNUT HILL, PA

247-9490

- Over 350 varieties of select herbaceous perennials, wildflowers, and ferns.
- Flowering, unusual, and rare trees as well as tried and true varieties.
- Large selection of dried flowers and arranging supplies.
- Distinctive terra cotta pottery.
- Landscape design and installation services.
- Garden club representatives are invited to contact us concerning group orders and discounts.

LAUREL HILL GARDENS

IT ISN'T EASY BEING GREEN unless you have a QED residential Lord and Burnham greenhouse added to your digs. We design, erect, and equip to satisfy your rules of green thumb. Grow anything green year-round (except perhaps frogs). **QED, INC.**—offering expected amenities to the Philadelphia Main Line and Chestnut Hill. 688-1514. P.O. Box 161, Villanova, PA 19085.

Sunrooms - Greenhouses
Redwood Window Greenhouses
Full Size Samples on Display
Aluminum, Redwood, Swedish Fir
Custom Design and Installation

SunSpaces Inc.

Main & Walnut Sts.
North Wales, PA 19454
215-699-3747

GREENHOUSE REPAIRS AND MAINTENANCE

Sales and Construction

GEORGE C. MATT, INC.

212 St. Georges Road, Ardmore, PA 19003
215-649-2745

OUTDOOR FURNITURE

To replace or recycle

Hill Co.

8615 Germantown Ave.
247-7600

We make your outdoor furniture look like new.

The proper landscape design will transform your garden from a collection of plants into a special extension of your home. Proper design will improve your property value as well as give you a place for quiet reprieve, a delightful entertaining area, a happy environment for play or any combination you desire. Come to **J. Franklin Styer Nurseries** — **Philadelphia Flower Show Award Winner** for over thirty years. Call 459-2400 for more information or an appointment.



DILATUSH NURSERY

Dwarf and unusual woody plants. By appointment only. 609-585-5387. 780 Rte. 130, Robbinsville, NJ 08691 (just south of Interstate 195)

Specializing in the Unusual ... Dwarf rhododendrons, deciduous and evergreen azaleas, dwarf evergreens, companion plants. Catalog \$1.00, refundable. The **Cummins Garden**, 22 Robertsville Road, Marlboro, NJ 07746. Phone: 201-536-2591

ARBORICULTURE SERVICES

Custom Pruning and Complete Care of Trees and Shrubs to Promote Healthy Attractive Plants

McFARLAND LANDSCAPE SERVICES

Phila. - 438-3970
East Mont. Co. - 646-7222
Main Line - 688-6644

ROSE VALLEY NURSERIES

Recipient of the 1983 Philadelphia Flower Show, Inc., Silver Trophy. Visit our garden center and landscape design office for seeds, plants, and plans. Staffed by professional horticulturists. 684 S. New Middletown Rd., Media, PA 19063. (215) 872-7206.

FRIENDS HOSPITAL GARDEN DAYS

Visit the spectacular azalea gardens of America's first private psychiatric hospital, Sunday, **April 28**, and the weekends of **May 4-5** and **May 11-12**, Noon to 5:00 PM. Friends Hospital's 100-acre grounds feature numerous varieties of trees, native wildflowers, and flower gardens in addition to the famed azaleas. Plant clinics, self-guided nature walks, horticulture demonstrations, and sales of azaleas and bedding plants. A \$2.00 donation per carload of visitors is requested, and each driver receives a year-old azalea plant grown from the Hospital's shrubs. Located in Philadelphia on the Roosevelt Boulevard (US 1) at Adams Avenue, across from Sears. For more information, phone 215-831-4600.

Landscape Services

DAVID BROTHERS LANDSCAPE NURSERY

For Fine

- Design/Built Gardens
- Consultation
- Landscape Restoration

QUALITY SERVICE WITH
COURTESY & RELIABILITY

247-2992 584-1550

PLANTED TOPIARY SCULPTURES. Many designs. Shipped anywhere. Free catalog. Credit cards & phone orders. 215-925-4125. **EXOTIC BLOSSOMS**, 510 South 5th Street, Philadelphia, PA 19147.

PHILIP H. McCULLOUGH, INC.

A Complete Lawn Service
Patios, Railroad tie walls, fences, etc.

"We Maintain What We Install"

Rose Tree, Media 566-7769
Main Line 527-1909



Herb and spice merchants Bill and Lee Drinkwater carefully consider all aspects of a plant at the Herb Sale. See page 3.



Never a dull day with dill.

All About Herbs

THE
**green
scene**

HORTICULTURE IN THE DELAWARE VALLEY
JULY • AUGUST • 1985

\$1.50



in this issue

4



14



26



3. What is a Herb?

Nancy P. Howard

4. Herbs: the Jewels of the Kitchen

Judy Street

8. Starting the Herb Habit in History

Elizabeth C. Walker

9. Basic Herb Gardening

Rosalinda R. Madara

14. Growing Herbs in Containers

J. Blaine Bonham

19. Lay Down Your Trowel and Clippers and Visit Some Herb Gardens

Joanna Reed

23. Help Me Make It Through the Winter

Joyce M. Douglas

26. Herbs: Good Medicine or Bad

Ann Jarmusch

30. Design on Herbs

Ed Lindemann

33. Herbs: Books and Plant Sources

Mary Lou Wolfe

34. Herbals: of Virtues and Violets

Julie Morris

34. Herb Crafts: For Use or For Delight

Bertha Reppert

40. Letter to the Editor

40. The Plant Finder

41. Classified Advertising

42. Herb Stories from Past Issues of *Green Scene*

Audrey Manley

42. Index

Front cover: Unidentified child carries harvested dill.

photo supplied by Holly Shimizu, National Herb Garden, U.S. National Arboretum

Back cover:

photo by Edmund B. Gilchrist, Jr.

Volume 13, Number 6

July/August 1985

THE PENNSYLVANIA HORTICULTURAL SOCIETY

325 Walnut Street, Philadelphia, Pa. 19106

Telephone: 215-625-8250

Horticultural Hotline: 215-922-8043

Robert S. Ryan / *Chair*

Jane G. Pepper / *President*

Jean Byrne / *Editor*

PUBLICATIONS COMMITTEE:

Adele G. Greenfield / *Chair*

Judy Foley / *Vice Chair*

Kathryn S. Andersen

Darrel Apps

Anne S. Cunningham

Charles W. Heuser

L. Wilbur Zimmerman

Natalie Kempner

James J. McKeehen

Designer: Julie Baxendell, Baxendell / Lambeck Associates

Separations: Lincoln Graphics **Printer:** Havertown Printing

THE GREEN SCENE, (USPS 955580) Volume 13, No. 6, published bimonthly, January, March, May, July, September, November, by the Pennsylvania Horticultural Society, a non-profit membership organization at 325 Walnut Street, Philadelphia, PA 19106. Subscription: \$8.50 - Single Copy: \$1.50. Second class postage paid at Philadelphia, PA 19106. • **POSTMASTER:** Send address change to THE GREEN SCENE, 325 Walnut Street, Philadelphia, PA 19106.

• Pennsylvania Horticultural Society, 1985

Green Scene subscriptions are part of the membership benefits for:

Pennsylvania Horticultural Society

Maryland Horticultural Society

Frelinghuysen Arboretum

Skylands Arboretum


Blithewold Gardens and Arboretum

Reeves Reed Arboretum



photo by Edmund B. Gilchrist, Jr.

What is a Herb?

 by Nancy P. Howard

A herb is a plant with the distinguished characteristic of having or having had a use. Such a plant has risen to the status of herb because one or more of its parts (root, stem, leaf, flower, etc.) contains oils, vitamins, minerals or other properties that have proven useful in medicine, cooking, industrial products and many other areas.

Primitive man started it all. He may not have known why some of the roots, bark, leaves or flowers growing around him numbed his toothache, healed his wounds, tasted good or comforted his soul, but he did like the pleasant results and these he passed on to his children. The generations that followed carried on experimenting, discovering and learning, bringing to us a vast heritage of knowledge, tradition, history, lore and legend.

Every country, every era has had its particular living conditions with its individual necessities and priorities – the demands of wars and the luxuries of peace. Herbs have been right there to meet the requirements of the times and have provided in addition to medicines and culinary delights (just to mention a few) cosmetics, antiseptics, disinfectants for houses and hospitals, air fresheners, hair rinses, bath waters, insect repellents, dyes and fibers for linens.

Today, herbs are still part of these products although they are processed differently. Acres of herbs are cultivated for industrial products, in-depth research and medicines.

To grow herbs is a constant joy. You are in contact daily with delicious flavors and aromas and the fascinating challenge of training – whether the herbs are in a pot or on several acres.

Herb gardens were *the gardens* for centuries. Eventually the day of enlightenment did arrive and an appreciation of the beauty of plants, regardless of their utility was awakened. Plants were introduced from around the world, gardens broke the bounds of walls and enclosures and horticulture and landscaping progressed at a rapid pace.

Herbs quickly took their place in these new gardens. They provided a setting for these new arrivals – edgings, knot gardens, hedges. Their versatile growing habits, the various colors and textures of their foliage, their ruggedness and adaptability to various growing conditions, their attractiveness in herbaceous borders, winsome appeal in rock gardens, helpfulness as ground covers in sun or shade put them into an extraordinary horticultural niche.

All this wealth of learning and experience has come down to us, and we are more than blessed in the Delaware Valley in all matters concerning herbs. The Pennsylvania Horticultural Society library contains books on every facet of growing herbs, their uses, history, lore, and legend. Nearby nurseries provide an excellent choice of plants and there are gardens: gardens of every type, public and private, large and small.

Take time out once in a while to wander down a garden path and become enveloped in the rich aroma of the clove pinks. See the patterns and carpets of various creeping thymes, hedges of lavender, banks of bee balm with the humming birds winging in for a drink, and the brilliant colors of pineapple sage and the soft velvety purple of mexican bush sage in the fall. Never, ever, is there a dull moment in a herb garden.

•
Nancy Howard is a member of the Philadelphia Unit, Herb Society of America and the HSA Committee, National Herb Garden. She is interested in collecting, propagating and sharing unusual herbs and species and cultivars as well as in vegetable gardening and companion planting.



photos by Edmund B. Glitchist, Jr

Some delicious things to make from herbs for use throughout the year: herb mixes, oils, wreaths, herb balls, mustards, nuts, syrups, vinegars and cheeses.

HERBS:

the Jewels of the Kitchen

 by Judy Street

the green scene / july 1985

When I was walking through the Reading Terminal Market in Philadelphia, many years ago, I saw a Frenchman at a small stand surrounded by dozens of bunched fragrant herbs. I was completely fascinated and wanted to buy some of everything, but I did not have a kitchen, so did not buy anything. Although my love affair with good food and cooking started early in life in my mother's kitchen in Virginia, I had never cooked with herbs. I only drank tansy tea every spring at the insistence of my dearly beloved grandmother. In my mind herbs were very French and associated with magic.

Later in life, but also long ago, I was lucky to become friends with a French Canadian woman who cooked with herbs. My visits to her kitchen when she was cooking were very special experiences. A plump, smiling woman, she always used quick, graceful movements to add those pinches of herbs. When I asked her "how much," she would smile and answer "just enough to make it taste right." She showed me how she stored them, too, and I remember clearly the tall glass jars filled with crisp, fresh herbs ready to use in her delicious soups, stews and casseroles. Just to lift the lid from any one of them as it simmered and inhale the perfume that was released was enough to make me want to live with and cook with herbs forever. Their continued use is guaranteed to become habit forming.

herbs: fine and robust

The flavor of herbs is in the oils in the foliage, so the leaves and sometimes tender stems are the parts generally used in cooking. An exception is the onion family, such as garlic and shallots whose bulbs are used.

Culinary herbs are generally described as fine or robust. The fine are those with a delicate flavor such as burnet, chervil, and chives and are used to complement delicately flavored foods. They are not usually cooked a long time but added to foods at the end of cooking or just before serving. The French term *finest herbs* is a combination of such herbs as chervil, chives and parsley, best known for their use in omelettes.

The strong or robust herbs such as bay, oregano, rosemary, sage, savory and thyme, marry well with hearty foods such as game, roasts, stews and casseroles; their flavors become more subtle with

Spices are not herbs

Spices are the berries or bark of aromatic plants usually grown in the tropics, such as peppercorns, nutmeg and cinnamon. They, too, are indispensable to good cooking but are not interchangeable with herbs.

cooking. Some are best with long cooking, but some chefs believe that others should be added toward the end of the cooking period. There are no hard and fast rules as each herb has its own characteristics. The flavor of basil, for example, becomes much

stronger as it simmers in a tomato sauce.

Many herbs such as basil, burnet, chervil, chives, dill, mint and tarragon are not always cooked but can be used raw – finely chopped, of course – in salad dressings, marinades, garnishes for soups and in fruit dishes.

harvesting, preserving and storing

Ideally herbs should be harvested early in the morning after the dew has disappeared and before the sun becomes hot enough to dry out the oils in the foliage. Also, for culinary use, they should be cut just before going into flower when they are at the peak of their flavor. Include flowers when drying for other purposes. Always cut chives at ground level, do not tip and they will grow back quickly.

To dry. Any of several methods can be used, so choose the one best suited to your needs and kitchen. Prepare by removing imperfect leaves plus all those from lower part of stems to make bundles easier to handle. Wash in cold water and dry thoroughly on towels. Dry on screen trays; arrange to allow good air circulation, make into bunches, fasten with rubber bands and hang on a line in a warm, dark, well-ventilated room with paper clips, or spread on trays and dry at low heat in a conventional or microwave oven. Those dried by hanging may be placed in paper bags with holes punched in them to keep them cleaner if preferred. The drying process can take minutes or several weeks depend-

continued



Herb vinegars glisten like jewels at Apple Pie Farm.

the Jewels of the Kitchen

ing on the method used. They are ready to store when the leaves are dry and crumbly. Note: salad burnet and chervil do not retain much flavor when dried.

To freeze. Harvest, prepare, wash and dry herbs as for drying. Except for chives, which should be finely chopped, leave herbs on their stems and place in individual plastic bags or containers sized according to family needs. You retain more flavor if you leave them on the stem and crush when you use the herb. The Cooperative Extension Service of the Pennsylvania State University recommends blanching some herbs in boiling water for 50 seconds, and cooling quickly before freezing.

"The only way I could cook without herbs would be if my hands were tied behind my back!"

You can chop mixtures of herbs together and freeze in small quantities, to use in winter in soups and stews; leaves and blossoms can be frozen in ring molds for use in punch bowls. Sweet woodruff and borage blossoms with or without strawberries are especially pretty frozen together.

Other ways to preserve. Some cooks recommend packing basil leaves coated with olive oil and refrigerating or spreading the oil-covered leaves between sheets of wax paper and freezing. Others have reported success by layering basil and sage in salt.

To store

fresh herbs:

- Strip lower leaves from stems of leafy ones, such as mint, marjoram and basil. Wash and stand in shallow water in refrigerator or wash and store entire stems in tightly closed jar in refrigerator. Basil keeps better in a cool rather than a cold place.
- After washing the woody ones such as rosemary and thyme, mist, place in shallow pans, cover with a towel, refrigerate and mist daily or store the washed herbs in tightly closed jars as above.
- Chives — wrap in damp paper or cloth towel and refrigerate in crisper. They should be kept damp but not wet to retain crispness and to prevent spoilage.

dried herbs:

- Place long stemmed bunches that are to be used for decorative purposes in plastic bags. Close tightly with twist ties and store in dark drawer or closet until used.*

*These can be used for container arrangements, sprays, wreaths, balls, potpourris, etc.

- Place those for culinary use in glass or metal airtight containers on their stems; label, date and store in a cool, dark place. Herbs lose their oils quickly and are more flavorful if stored whole and crushed when used. For kitchen storage choose the darkest, coolest and driest cupboard available and for convenience place herbs on shelf in alphabetical order. Cupboards near the stove are the most convenient but apt to be hot and humid.

things to remember when cooking with herbs

- The flavor of fresh herbs is far superior to that of dried herbs. Although the dried herbs enhance flavors they cannot add the excitement, piquancy, freshness and color that fresh herbs do.
- The flavor of good quality dried herbs is more concentrated than that of the fresh, so when substituting dried herbs for fresh, use less of the dried. Although most recipes recommend using half the amount of dried as fresh this rule is really arbitrary. Be guided by the quality, strength and freshness of the dried herb and by personal taste.
- Use delicately flavored herbs to complement delicate foods and the stronger herbs for hearty foods.
- Herb mixtures such as chives, basil, mint, parsley, etc., are excellent for a vinaigrette dressing and other mixtures for omelettes and vegetables, but generally one herb for a main dish such as tarragon with chicken or rosemary with lamb, is a wise choice.
- Some herbs are added at the beginning of cooking and others at the end. Bay leaf, parsley and thyme are usually added at the beginning of the cooking period as they release their flavors over a long period of time, and chervil is added at the end for freshness and color.
- When planning a meal do not include herbs in every dish on the menu, otherwise you'll confuse your palate.
- Herbs release their flavor when chopped or crushed but this should be done just before using.
- Use restraint when cooking with herbs. If a little is good, more is not necessarily better. So if the dish you have prepared tastes of any one herb you have probably used too much. The end result should be delicious, tantalizing and mysterious.
- If the dried herbs in your cupboard have lost their aroma and color and taste like hay they should be tossed.



how to marry your herbs. which herb for which food and how much?

There are no set rules for using specific herbs with specific foods but there are some that seem "to marry" better than others. Part of the fun of cooking with herbs is to experiment and try different foods. So be adventuresome and experiment, taste. Taste until you like what you have created. One of my first experiments in using rosemary was not a great success. I added it to beautiful, fresh string beans from the garden anticipating a taste treat and great praise from my family. Almost simultaneously my husband and son exclaimed "What in the world have you done to these string beans, they taste like hay!" They did, too, so I started to learn about cooking with herbs. Here are some suggested uses and combinations that I've liked:

balm, lemon

In teas, fruit drinks, crepe batter and as part of a marinade for poultry and veal.

basils

In soups, salads, eggs, cheeses, all tomato dishes and of course, pesto. Flavor intensifies with cooking.

lovage

Resembles celery in appearance and taste but is stronger. Use in soups, stews and sauces.

burnet salad

Gives a delicious cucumber flavor to salads, soups and vinegar.

chervil

Also known as a french parsley. Acts as a catalyst and brings out flavor of other herbs for soups, sauces, fish and omelettes. Do not cook except briefly.

chives, common and garlic

A truly versatile herb; good in almost everything, but especially salads. Use raw except when making chive soup. Garlic chives go well with bland foods such as fish, mushrooms, avocado, etc.



dill
Perfect for seafood, potatoes, eggs, mushrooms and salads. An excellent substitute for salt.

fennel
Gives wonderful flavor to fish by itself or in combination with rosemary. Try stuffing a fresh fish with fennel or grilling one over dried fennel stalks.

marjoram
"Joy of the Mountain." Good with meats, vegetables and especially potatoes, mushrooms, stuffings, marinades and biscuits.

mints
Add flavor and zest to many everyday dishes — drinks, fruits, salad dressings, soups, vegetables and meats. Try with creamed new potatoes.

oregano
A natural for all tomato dishes, especially those of Mexican/Spanish origin; meats, beans, mushrooms, eggs and cheese.

parsley
Essential for all good cooking. The flat (plain) or Italian is more flavorful than the curly.

rosemary
A strong herb, use judiciously. Goes well with lamb, pork, chicken and bland vegetables.

sage
Good with game, pork, cheeses and in stuffings and breads. Sage tea was once very popular.

savory
The bean herb. Pungent but very flavorful so use sparingly in beans, stews and with game.

verbena, lemon
Use whenever a lemon flavor is desired. Good for all fruit drinks and dishes and is excellent in a marinade for chicken and fish. Good in jellies.

woodruff, sweet
The May wine herb, but is also delicious in a sauce for chicken.

continued



Left from top: dwarf grey sage, sweet basil, purple basil, marjoram and sorrel. Right from top: Italian parsley, curly parsley, large grey sage, dill and chervil.



Herb hearts



What Some Famous Chefs Say About Cooking with Herbs

Leslie Revsin, executive chef, One Fifth Avenue Restaurant, New York, NY

"What do I think about cooking with fresh herbs? Why I'm practically married to them and the only way I could cook without them would be if my hands were tied behind my back! They have such interesting personalities, too, ranging from small, gentle and beguiling to big, strong and assertive. I love to match their personalities with the dishes I'm preparing. The subtle chervil with its unassuming appearance but great power as a catalyst in bringing out the best in all foods is perfect with delicate fish dishes, while the strong flavored, earthy rosemary combined with the distinctive anise flavored fennel, makes a superb marinade for swordfish, producing a happy marriage of flavors. For me their use can be compared to a musical passage played in crescendo from piano to fortissimo. A fun performance with rewarding results for the palate."

Hanspeter Bernet, executive chef, Hotel du Pont, Wilmington, DE

"In supplying the ever-growing request for low salt foods I find that the assertive herbs such as dill, rosemary, tarragon and thyme – used alone or in combination with the more delicate ones such as chervil, chives and parsley – are generally more effective as salt substitutes, as they give so much flavor the salt is hardly missed."

George Perrier, owner/chef, Le Bec Fin, Philadelphia, PA

"Cooking without herbs is like a day without sunshine. They are the jewels of the kitchen."

Noel Comess, executive chef, The Quilted Giraffe, New York, NY

"Herbs live to give flavor. What a calling! I'd like to think of myself that way."

Helen Chardack, executive chef, Jams Restaurant, New York, NY

"Cooking without them would be like cooking without heat!"

Alain Souliha, executive chef, Le Cirque, New York, NY

"Des herbes sont essentiels pour un bon repas. Ils donnent l'accént."

Jean Marie La Croix, executive chef, The Four Seasons Hotel, Philadelphia, PA

"Generally, I use one herb for one dish, such as tarragon with chicken or rosemary with lamb, rather than a mixture of herbs. For example, an omelette with just chervil is delicious and a change from the usual mixture of *finest herbes*. Also, I usually add the herb(s) toward the end of cooking to retain the fresh flavor."

Fritz Blank, owner/chef, Deux Cheminees, Philadelphia, PA

"There are no substitutes for the fresh herbs and with few exceptions I do not use dried herbs. Here at Deux Cheminees I make some 'Basic' or 'Mother' sauces and by adding different herbs create sauces for different dishes, each with its own distinctive perfume and flavor."

Stanley Kramer, executive chef, The Oyster Bar and Restaurant, New York, NY

"Fresh herbs are God's bounty to the palate."

general cooking hints

- Put sprigs of herbs in cooking water for vegetables and use the same herb chopped in butter for the vegetables at serving time. Examples: dill with potatoes, rosemary with string beans, garlic and tarragon with carrots.
- Use shredded herbs on sandwiches instead of lettuce. Examples: basil with tomato, dill with cucumber, sorrel with

"Herbs live to give a flavor. What a calling! I'd like to think of myself that way."

chopped egg or tunafish.

- Use herbs in baking – cocktail snacks, breads and cookies.
- Use herb vinegars in marinades and in sauces, also for deglazing sauté pans.
- Use for garnishes. Parsley isn't the only pretty herb.

using herbs in low salt diets

The trend to decrease or eliminate salt in our diets today has brought herbs to the forefront as salt substitutes. Some restaurants offer "low sodium" menus, and herbs are adding flavor and freshness to foods that would otherwise be uninteresting, tasteless and dreary. The famous Four Seasons restaurant in New York has designed Spa menus for their customers wanting low salt and/or low calorie foods. They have done considerable nutritional research in planning these menus, and herbs have an important place in them. (See box for examples.)

Hospitals are also becoming aware of the need for adding more flavor to their foods which, of necessity, are often low in salt and other seasonings.

other uses

Herbs have beauty, color and fragrance when used alone or in combination with flowers in arrangement, so use them this way first and later in cooking.

Be adventuresome! Try different herbs, alone or in combination with others and find out what magic you can achieve, but like my French Canadian friend, try to find the amounts and combinations that are "just right."

Judy Street supplies herbs and herb products to some of the finest restaurants in New York, Philadelphia, Washington, Wilmington and Baltimore. She ships herbs all over the country to commercial and private clients from Apple Pie Farm in Malvern, where she devotes six of her 17½ acres to growing herbs. For a price list, send a number 10 or large stamped, self-addressed envelope and \$2.00 to Apple Pie Farm, Union Hill Road, R.D. 1, Malvern, PA 19355.

STARTING THE HERB HABIT IN HISTORY

No one knows when people first used a plant for something other than basic food. No one knows whether a man first put it to use or a woman. From prehistoric times men have used specific plants to poison weapon tips for war and hunting, to sprinkle on stream waters to catch fish; to cast spells; to psych himself up; to chase evil spirits and to cure ills. Women have used plants for poultices and every imaginable remedy for countless ailments; to discourage bedbugs, lice and all manner of insects; to freshen the air (as have judges in the courtroom); as perfumes, in soaps, as dyes; to flavor and spice up meals; for sweetmeats; for infusions.

Elizabeth C. Walker

BASIC HERB GARDENING



by Rosalinda R. Madara



photos by Rosalinda R. Madara

Golden yarrow (*Achillea taygetea*)

If you're an enthusiast with an established herb garden, lucky you. You can add plants and make a spot you already know and love even more interesting. For the newcomer starting from scratch you may find that you have a certain advantage. You can take the time to properly prepare your garden, decide exactly where you want to put it, what you want to grow in it, and then you can have the pleasure of selecting your plants and placing them.

When choosing the spot for your garden, remember that most herbs like a sunny, well-drained home. If your soil is poor, you may wish to dig in well-composted leaves or peat moss or if your soil is packed and very clayish, coarse builder's sand worked in will help. A scant amount of lime, fall or winter, is a good idea, also. In the spring, mushroom soil can be added to further enrich your garden.

Starting small is best. Unless you are locked in for space, be sure that you can push out your garden's boundaries. As your herb knowledge grows, so will your

collection, and nothing is worse than having a treasure with no space left in the garden.

It's important to locate a culinary garden near the kitchen side of your house, obviously; but, be sure to plant your garden where you and your friends can see it. After all, it will be a source of pride and conversation, not just during the first season, but for years to come.

The best time to start such a garden is spring, when plants have just begun to grow. Young herbs and divisions of established material transplant with greatest success in late April and early May. Although plants can be moved in the fall, there is less time for the roots to become established and a severe winter will take its toll. If you must plant in September or October, be sure to mulch as soon as your garden is hit by heavy frost. No plant can tolerate constant freezing and thawing — especially one trying to acclimate itself to a new home.

To insure that your initial digging-in is a

success, place the plants still in the pots on top of the soil where you think you will plant them. Check to see if you have a pleasing mixture of textures, heights, and colors. Move your plants about until you are satisfied. This procedure gives you mobility without mauling your herbs digging them in, changing your mind, and then digging them out again. In the end you will be satisfied, and your plant's root system will not be damaged.

Don't crowd your plants. Most herbs need plenty of room to grow out as well as up. If jammed together, they will not look their best and will end up fighting each other for light and fresh air.

Place the taller ones in the back of your garden, and the shorter near the front. A low-growing shade loving specimen can be slipped near a tall plant, which will protect it from the sun and will give you a nice feeling of varied heights when you look at the garden.

After setting herbs out into the garden, do not neglect to water them with a weak

continued

BASIC HERB GARDENING

continued

solution of Transplantone, available at hardware stores and garden centers. This rooting hormone helps decrease the shock of being moved. Keep to the rule that you never transplant anything from 11 am until 2 pm unless it is drizzling. Newly moved plants should be covered with inverted flower pots or a thin layer of damp newspaper held by small stones at the corners. This will give them shade (the coverings only need to be kept until sunset). But what a difference it makes!

The use of mulch is up to the individual grower. By mid-summer, the thought of baking in the 95° sunscorched mid-day

There is no substitute for knowledge about your plants – and knowledge begins with knowing the names, both common and Latin. After all, you have no trouble with baseball players, movie stars, or your child's friends, so why should you have trouble with your plants?

while pulling up weeds usually leads even the most avid gardener to mulch. Mulching hinders the growth of weeds and helps keep roots cool and moisture from evaporating as quickly. Possible mulches include well composted leaves, cocoa bean hulls, shredded pine bark or small pine nuggets, Right Dress, or black plastic.

Fertilizing your herbs isn't a must when they are grown outside. A shot or two of an all-purpose plant food might soothe your conscience, but it is not vital to the plant. Having enough water is, however, of paramount importance. When there is a spell with no rain, a thorough soaking in the evening will bring almost instant improvement and will guarantee that your herbs will remain lush all summer. Do not water at mid-day and risk the chance of "burning" your leaves.

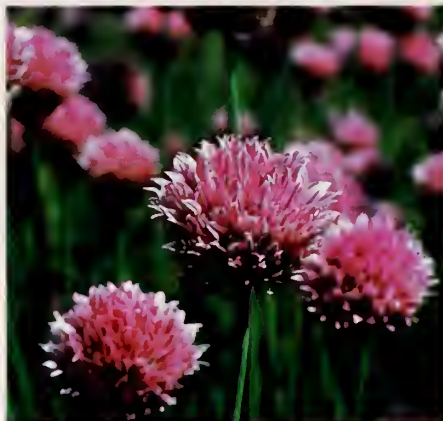
Unfortunately droughts such as the one we have been experiencing change the rules. Follow your local ordinances, but remember that a quart or two of water poured at sunset around the base of each plant in a newly established garden, or when a specimen is prostrate will make the difference in the survival of your garden. (You can save water from the last rinse of your laundry to take to the garden in buckets, but be sure not to add fabric softener to this cycle.)

Infestations are every gardener's worry. Insecticides should be a last resort. Even then, when using chemicals, carefully follow the instructions, and don't apply in the heat of the day. *Never use chemicals in a*

culinary herb garden – you don't need to ingest them in your bouquet garni.

Visit your garden at least once a day and plan to spend some time there. Always take your clippers and a small trash basket or kitchen bowl with you. Constantly cutting your herbs, whether deadheading or simply shaping a plant for aesthetic reasons, will insure healthy, well-grown specimens. Daily visits will catch any problems before they become crises.

One of the greatest pleasures a gardener can have is sharing plants. Spring is the best time to divide your material. As you survey your garden in March and April, you will find that certain plants have outgrown their spots – these are the ones to divide. To begin, take a sharp spade and dig up the entire clump, then carefully divide the plant to get both new growth and as much root as possible. Replant your smaller clumps and be sure to water. (Using Transplantone at this time isn't a must.) You may want to clump three smaller plants in a triangular shape or you may want to move a



Chives (*Allium schoenoprasum*)

new division elsewhere. See why you need room to expand?

There is no substitute for knowledge about your plants – and knowledge begins with knowing the names, both common and Latin. After all, you have no trouble with baseball players, movie stars, or your child's friends, so why should you have trouble with your plants? Look on your herbs as friends, and go slowly. You will soon be spouting Latin like a seasoned veteran.

Once you have obtained a plant, label it, and always copy down the name in a notebook or file. The only sure-fire way, however, to have every herb identified accurately for years is to make a chart. Keep it updated. If you add material, be sure to note the name and placement. Conversely if something dies, remove the

name. Labels always walk away in the mouths of young lab pups, fall under lawnmower blades, or fade because the permanent waterproof ink washes off. A chart is extra work, but it is well worth it, and as an added bonus, in mid-winter you can go over it to decide what to order from the tempting array of catalogs arriving daily and where to plant your new treasures.

Don't forget also that your plant should be labeled if you are going to give it to a



Golden oregano (*Origanum vulgare* 'Aureum')

friend. No one wants an unnamed phantom. Clearly write out the label in Latin and English – your efforts will be greatly appreciated, and you can expect the same kindness in return.

Lastly, two key ingredients make up an herb gardener's outlook: patience and pride. Plants are going through trauma as they adjust to your garden. Give them time. Learn to wait. Pride; give it your best effort, and take great satisfaction and pleasure in a job well done. Show off your garden.

Use your herbs and share them, that's what they're grown for, and have been for thousands of years.

for the beginner: tempting herbs to try

Achillea tends to be one of the taller herbs. Yarrow has been used for dyes, as cures by the early colonists, and as a cut flower that dries well. The *A. rubra* is a rosy pink, while *A. filipendulina* 'Coronation Gold' and *A. taygetea* are yellow, adding a splash of color to any garden. Trim back severely when the blooms are spent. These plants should be divided in the spring.

Allium are a mass of little bulbs. Chives, *A. schoenoprasum*, the most popular, bloom in early spring with round pink globes. The tubular leaves are a marvelous flavoring, both fresh and dried. Clumps should be cut almost to ground level after they have bloomed. When trimming leaves

for cooking, be sure to snip off the outside ones near the ground so that there are no ugly, scarred brown tops remaining. Chives should be divided in early spring every three years.

An intriguing first cousin to chives is dafodil garlic, *A. tuberosum*, which blooms in August, a mass of tiny white stars. The flavoring in the leaves is a bit more garlicky than chives. These plants can be easily grown from seeds that spill onto the ground after the plant blooms. A number of other members of the allium family also add interest to the herb garden.

Artemisia dracunculus sativa is the popular culinary herb French tarragon. It is a soft, green leaved plant, which rarely blooms. As a result, it produces no seed. Plants must be purchased or divided out from an established clump. This should be done in early spring. Tarragon must be kept trimmed up all summer or it gets floppy. Do not purchase Russian tarragon by mistake. It is not a substitute.

Dianthus is the family name for carnations. All varieties are prized for their sweet scent and mass of bloom. These are best grown from seed or bought from your local garden center. After blooming in May, cut off the heads. The remaining low, silvery foliage contrasts nicely with neighboring plants. Other varieties of dianthus are *D. gratianopolitanus* and *D. plumarius* both of which are very colorful and fragrant.

Laurus nobilis is sweet bay, an absolute must in bouquet garni. Bay is not hardy



Purple sage (*Salvia officinalis* 'Purpurascens')

in this area and should be grown in a pot, or if planted in the garden directly, should be dug up and moved indoors to winter over in a cool, moderately damp spot. The most painless way to obtain a bay is to buy it. Cuttings take forever to root, and in general sweet bay is a slow grower. Put down a layer of ashes before setting the pot in the garden and tuck old pantyhose or screening over the drainage hole. Ashes slow the



Anise hyssop (*Agastache foeniculum*)

root growth out of the pot and the pantyhose or screening helps prevent unwanted creatures from venturing into the pot. Remember to bring sweet bay indoors well before the first frost. Mark the first week in September on your calendar to bring in all of your tender plants.

Lavandula is the most loved family of plants. Fields of lavenders flourish in southern France, and lavender is a must for any herb garden be it England, New Zealand, or the USA. Choose *L. angustifolia*, the English lavender, or one of its cultivars *L.a.* subsp. a 'Hidcote' or 'Munstead' which enjoy growing in the Delaware Valley and don't mind our winters too much. Blooms appear on long, thin stems in June and should be harvested as the lower flowerlets (individual flowers making up composite bloom) on the stem open. Cut in the early morning, the scent is strongest. Lavender can be hung in bunches to dry and used as a moth repellent or made into a sachet, and of course it is used extensively in soaps and cosmetics. Cuttings, the best way to start new plants, should be taken from the soft, new growth in August. Use a touch of Rootone before inserting them into a light, damp medium, then winter in a greenhouse or under lights.

Melissa officinalis has a lovely, lemony flavor and is a popular plant with gardeners and honey bees alike. Lemon balm perks up cold drinks and adds a special touch when lining cake pans. It grows with great abandon and needs to be placed at the back of the garden where one can snip away wildly. Stake firmly to prevent flopping over onto a neighbor. A bunch of leaves brought inside in a vase freshens up any room. It's winter hardy.

Mentha family members are universally popular, but can grow out of control. The flavors are enjoyed in a myriad of ways from chewing gums to iced teas. Mints send out unwanted runners that manage to

pop up in the worst possible spots. The two most popular varieties are *M. x piperita*, peppermint, and *M. spicata*, spearmint. Others available are *M. suaveolens*, applemint, and *M. pulegium*, pennyroyal, which is less invasive. Don't plant mint in your herb garden, or if you must, confine it by cutting out the bottom of a medium size plastic trash can. Sink the can in the garden with 2 in. of the rim above the soil and fill it with soil, then plant the mint in the container. Make a special effort not to let your mint bloom if you have more than one variety, as mints easily cross and you will end up with a hodge-podge possessing little distinctive flavor. Mint must be cut back to keep it under control. The best way to grow mint is to pick a place of its own where it can spread and won't give you fits.

Ocimum basilicum is an annual. Basil can be grown from seed, or plants can be purchased and set out when danger of frost is past. The distinctive flavor of basil enhances fresh tomatoes, hefty stews, and pesto sauce. Basil comes with a big green



Marigold (*Tagetes tenuifolia*)

leaf, or a purply one, *O.b.* 'Purpurascens', as well as some delightful miniature varieties. Basil also comes in other flavors such as cinnamon and lemon, *O.b.* 'Cinnamon' and *O. x americanum*.

Origanum vulgare (oregano) and *Origanum majorana* (sweet marjoram) are two very important kitchen herbs. Oregano, with its low, sprawling growth has delightful pink blooms signaling chefs that the leaves are at their sweetest. It tends to be a bit floppy, but there is a more compact variety, *O. compactum*, and a lovely *O. vulgare* 'Aureum' with golden leaves. Sweet marjoram is grown as an annual outdoors or makes a nice little pot plant in a sunny kitchen window. It is the primary bouquet garni ingredient. Sweet marjoram has a grayish leaf and spreads out by layering roots.

Pelargonium graveolens has been val-

continued

Some Herbs to Start With

Names Latin/ Common	Perennial or Annual	Soil	Sun/Shade	Propagation	Height	Blooming Time	Color Bloom	Part of Plant Used	Uses
<i>Achillea millefolium</i> yarrow	P	dry garden loam	sun	division in spring seeds	24 in. - 36 in. should stake	July & Aug.	pink white magenta	leaves roots	dye medicinal drying
<i>Agastache foeniculum</i> anise hyssop	P	garden loam	sun	seed division	2½ ft. - 3 ft.	July	pink	leaves blooms	teas potpourri attract bees
<i>Allium schoenoprasum</i> chives	P	well-drained slightly gritty and light	sun	divide clumps after blooms seeds	12 in. - 15 in.	May	pink	blooms leaves	flavoring fresh and dry
<i>Artemisia dracunculus sativa</i> French tarragon	P	rich and dry	sun - can tolerate some shade	division in spring	18 in. - 24 in.	X	X	leaves	flavoring
<i>Dianthus caryophyllus</i> clove pink	P	slightly gritty garden soil with lime	sun	seeds purchase small plants	18 in.	May	pink white	blooms	flavoring potpourri cut flowers
<i>Laurus nobilis</i> sweet bay	T. P. * (pot)	rich & moist	mottled sun, semi-shade	soft wood cuttings purchase plants	4 ft. (pot grown)	summer	creamy	leaves	flavoring
<i>Lavandula angustifolia</i> English lavender	P	rich, well- drained	sun	seed soft cuttings	12 in. - 24 in.	June - July	lavender- bluish	bloom	fragrances potpourri
<i>Melissa officinalis</i> lemon balm	P	light, sandy	mottled sun to full sun	division	2½ ft. - 4 ft.	July	tiny white	leaves	cooking potpourri
<i>Mentha x piperita</i> or <i>Mentha spicata</i> spearmint	P	can grow in poor soil; never add manure to soil	sun	roots easily in water; division in spring	2 ft.	July trim back so it won't bloom	pinkish	leaves	flavoring
<i>Ocimum basilicum</i> basil	A	rich	sun	seeds buy small plants	24 in.	July-Aug	white	leaves	cooking
<i>Origanum vulgare</i> oregano	P	can tolerate poor soil	sun	division in spring	18 in.	July	pink	leaves	cooking cosmetics
<i>Origanum majorana</i> sweet marjoram	A	well-drained garden	sun	seed buy small plants	12 in.	July/Aug.	white	leaves	cooking
<i>Pelargonium graveolens</i> rose geranium	T. P. * (pot)	light, not too wet; can add sand	sun	cuttings - use no rooting hormone	15 in. grown in pot	mid-summer	pink	leaves	perfume cooking potpourri
<i>Petroselinum crispum</i> parsley	A	Average with room for tap root	sun	seeds buy small plants	12 in.	discourage	greenish- yellow	leaves	cooking
<i>Rosmarinus officinalis</i> rosemary	T. P. * (pot)	alkaline, not too heavy or wet	sun	soft end cuttings buy plants	18 in. grown in pot	July/Aug.	bluish	leaves (needles)	cooking potpourri
<i>Thymus vulgaris</i> thyme	P	not particular; will creep over rocks	sun	division in spring	4 in. - 18 in.	June - Aug.	pink	leaves	cooking
<i>Salvia officinalis</i> sage	P	mediocre but well-drained	sun	cuttings division in spring	2½ ft. - 3 ft.	June	blue	leaves	cooking
<i>Satureja montana</i> winter savory	P	light garden loam	sun	division in spring	3 ft.	July	white	leaves	medicinal culinary
<i>Stachys officinalis</i> betony	P	rich but not heavy	sun	seeds division	18 in. 24 in. 36 in.	July	white light pink dark pink	leaves	medicinal
<i>Stachys byzantina</i> woolly lamb's ears	P	slightly sandy, well- drained	sun - mottled sun	division	18 in.	June	pink	leaves	medicinal
<i>Tagetes tenuifolia</i> single marigold	A	light, not too wet	sun	seeds	18 in. - 24 in.	July/Aug	gold- orange	leaves blossom leaves roots	fragrances dye natural insect repellent
<i>Valeriana officinalis</i> valerian	P	garden loam	sun	division	2½ ft. - 3 ft.	June	white	leaves	medicinal

*Tender perennial



English lavender (*Lavandula angustifolia* subsp. *angustifolia*)

used for its scent for generations. The rose geranium is just one of many scented leaf geraniums, which add so greatly to the garden. A few varieties easily available are *P. crispum*, lemon; *P. x nervosum*, lime; *P. tomentosum*, peppermint; *P. scabrum*, apricot; *P. 'Rober's Lemon Rose.'* Most all are grown for the leaves and generally the white to pink blooms are insignificant. *P. scabrum* is the exception with its wonderful, shocking pink bloom. Very tender, pelargoniums must be brought inside for the winter. Cuttings root easily from the soft, end growth. Be sure to leave the cutting out in the air in shade for 3-4 hours to harden off before inserting into light rooting medium, and *never* use a rooting hormone.

Petroselinum crispum. Ogden Nash wrote: "Parsley is garsley ..." but what culinary herb garden would be complete without this garnish and magical source of vitamins? Grown as an annual in the Delaware Valley, parsley (a biennial) adds a ruffly accent to the garden and makes a nice, low edging. It thrives in the winter on a sunny kitchen window sill where creative cooks can snip at it constantly. Parsley can be grown from seed or pots with clusters of tiny plants can be purchased.

Rosmarinus officinalis is the rosemary most frequently grown. It is not hardy here and must be brought indoors before frost. Rosemary has a marvelous pungent flavor when cooked, and the needle shaped leaf

makes an interesting contrast with other herbs in the garden. Rosemary easily roots when soft, end cuttings are dipped in Rootone and inserted into moist, light potting medium. A number of varieties are available: 'Beneden Blue' and 'Tuscan Blue' have an upright growth while 'Severn Seas' [sic] and 'Lockwood de Forest' sprawl out before growing up. *R. officinalis* 'Prostratus,' creeping rosemary, simply has a lovely, low floppy way of growing and remains close to the ground.

Salvia officinalis is commonly known as garden sage. The most easily available sages include the garden variety, a hardy, silvery leaved plant, which is used for cooking. The blooms are bluish and winters in this area pose little problem. The plant should be cut back severely in the spring, and again after it blooms. Others less well known are *S. elegans*, pineapple sage, a fuzzy leaved, fruit-scented, tender perennial; *S. pratensis*, meadow sage, which has glorious, tall spikes of blue flowers; *S. sclarea*, clary sage, a large plant with creamy white flowers; and *S. officinalis* 'Tricolor,' which boasts purple, cream and green all on one leaf. These plants root easily if August cuttings are made from soft tissue. Sages can be grown from seed. *S. farinacea*, mealy cup sage, is especially exciting with spikes of royal blue flowers. As a background plant in an herb garden, sage is a winner. It is not too

particular about the soil, but needs plenty of sunlight.

Thymus vulgaris is just one of the myriad of thymes. Garden thyme, a relatively low, creeping plant, popular as a flavoring, should be given more credit for being a marvelous addition to any garden. Thymes grow up to 12 in. (*T. pulegioides*) or can remain low (*T. praecox* subspecies *arcticus*). There are super, fuzzy varieties which include *T. 'Woolly-stemmed Sharp'* and *T. p.* subsp. *a. 'Hall's Woolly';** thyme which has a lemon flavor, *T. x citriodorus;* thyme which has a silver edge, *T. argenteus;* and thymes with gold in the leaves, *T. 'Doone Valley'* and *T. 'Winter's Gold.'* Thymes bloom profusely from June until mid-August.

Additional herbs to try: ***Agastache foeniculum***, anise hyssop, tall, blooms pinky-lavender with scented leaves. ***Satureja montana***, winter savory, large July-blooming plant with dainty, white flowers. Leaves used for flavoring (fresh or dried). ***Stachys officinalis***, betony, with low-growing foliage and June-blooming spikes of white or pink blooms. ***Stachys byzantina***, woolly lamb's ears, with soft fuzzy leaves. A nice edging for a border. Pink blooms on spikes up to 18 in. tall. ***Tagetes tenuifolia***, marvelous little single marigold growing 12-18 in. Has spicy scent and grows easily from seed. Move young plants outdoors in late May. ***Valeriana officinalis***, valerian, tall, blooming early June with masses of white stars and has a lovely, sweet scent.

*The woolly herbs are available at the Philadelphia Unit, Herb Society of America's Sale in early May and at some local specialty garden and plant stores, e.g., Waterloo Gardens or Well Sweep Farm. See page 33 for addresses.

13

Do You Pronounce It Herb or Erb?

A simple four-letter word, *h-e-r-b* has been the cause of much discussion as to its pronunciation. In America one is often considered uncultured if he pronounces the *h*; in England he is apt to be branded a cockney if he drops the *h*.

Until 1475 the word was *erb*, both in spelling and in pronunciation. It came to England from the Latin *herba*, through the Old French *herbe* or *erbe*. At the beginning of the sixteenth century, the Latin *h* was re-attached to the word, but it remained mute until 1800. Since then pronunciation of the *h* has come into use; *herb* is correct in England. American usage still clings to the historical *erb*. Take your choice. When in London, say *herb*, when in New York say *erb*...

Reprinted courtesy of *Handbook on Culinary Herbs, Plants & Gardens*, Brooklyn Botanic Garden

And When in Philadelphia

If the Philadelphia Unit of the Herb Society of America has a right way to pronounce "herb" it is the best kept secret since someone tucked the recipe for Coca Cola in a safe. They insist either way is correct. When meeting with the various authors to prepare this issue of *Green Scene*, I noticed that the members themselves have individual preferences and seem to be quite democratic in the matter or pronunciation. If you want a clue about a particular author's position, I suggest you notice whether the author uses the limiting article "a" or "an" before herb when writing. Also, listen carefully when speaking with someone who is informed on the matter. And still you may end up simply having to take a side without anyone's imprimatur. Be brave.

The Editor



photo by J. Blaine Bonham

Libby Goldstein grooms her seven-year-old bay plant fully recovered from a scale infestation.

Growing Herbs in Containers



by J. Blaine Bonham



photo by J. Blaine Bonham

Perennial herbs on author's roof deck formed the backbone of this container garden. Several thymes, sages, and rosemaries are featured in this collection of two dozen varieties.

"I started to grow herbs in containers so that I could bring them inside during the winter; fresh herbs for cooking and sniffing, mostly sniffing." Libby Goldstein's seven-year-old bay plant rests in front of the sliding glass door that leads from her kitchen to her center-city Philadelphia backyard. On a mid-February morning, as we talk we look past the bay plant to the yard where a flock of birds are eating the bird seed lying on top of the soil in pots hanging from an apple tree.

Goldstein is an excellent horticulturist who experiments, conserves, recycles, and shares her knowledge and plants with others. Her active horticultural career demands that she be a practical grower. The herbs in containers that she brings into the house during the winter must not be too fussy. Most of them end up on windowsills in a house kept between 50° and 60° to deal with the reduced light and lower humidity conditions. She checks for watering every few days or so. If an insect horde invades a plant (spider mites are her bane), she tosses it out. "Miticides have only limited success if you're not able to change the environmental conditions," she told me, adding, "You have to create a moist microclimate." A favorite few container-grown herbs get extra attention. Besides the bay, pots of handsomely grown cardamom, star anise, and patchouli thrive on a card table in back of the south-facing living room window.

"When they come inside, they take their chances. Some of them make it, some of them don't. But it's lots of fun. Growing herbs in containers is fairly easy to do."

I agree with her. In my center city house, I gardened for seven years in wooden window and planter boxes, clay and plastic pots, growing over 40 varieties of annual and perennial herbs. Most of the perennials spent the winter outside on the roof, mulched with evergreen branches. Each fall, I brought into my sunroom/greenhouse the tender and marginally hardy herbs. In spite of some overwintering problems both outside and inside, I enjoyed growing herbs in containers more than growing anything else. Most of them thrived in the hot dry summer conditions on the roof. I learned to appreciate their varying forms and attractive foliage, and the perennial herbs provided the design background for my aerial garden. The bloom on many of them was a bonus for me. I also got a kick out of dashing up to the roof with kitchen shears to snip fresh herbs for that night's dinner.

I talked to six other city and suburban gardeners who enjoy growing herbs in containers to gather a consensus about cultural practices. Their collective experience yielded different reasons why they enjoyed growing herbs in containers, seven different sets of growing conditions and cultural practices, as well as a varied and long list of successes, frustrations, and favorites. (See the chart on page 18.)

Most herbs, especially the perennial ones, like to be in well-drained soil kept on the dry side. Porous containers, a light, sandy soil and a watering routine that allows for a good drying out accommodates those needs. Yet every grower did

things a little differently.

types of containers

Let's take types of containers, for example. Cecily Clark became interested in container herb-growing by accident. A few years ago, she became fascinated with the art of training plants into formal and informal shapes. She first tried rosemary, and it was a success. (Our "panel" voted the rosemary as the easiest plant to grow in containers.) Cecily, an oft-time blue ribbon winner at the Flower and Harvest shows for her container-grown herbs, feels that clay pots are the most suitable, because they are porous and allow excess moisture to

continued



Left to right, behind geranium, holy basil and purple and variegated sage make handsome specimens amidst ornamentals.

photo by J. Blaine Bonham



Cecily Clark grooms one of a formal matching pair of dwarf myrtle (*Myrtus communis* 'Microphylla') topiaries, which she trained from cuttings on a metal form. This elegant pair, four years old when photographed and kept for a ten-year period on a sunny porch, were created as decorations to be used on the mantel and on the terrace.



Frank Kieser grooms his three-year-old rosemary plant. Its companion rosemary is from a sibling cutting of the same age that is being trained as a potential bonsai.

escape. She insists that they must be plain clay pots; decorative ones can detract from the interesting foliage texture and plant form. She also endorses the use of wooden tubs for herb collections, because the texture and color of the wood harmonizes with herbs.

Frank Kieser uses plastic pots almost exclusively. He sinks most of the plastic pots of herbs into the community garden that he commands at 43rd and Sansom

Streets in West Philadelphia. He pulls them out of the ground in September, washes them off, and readies the best ones for exhibition in the Harvest Show.

Rosemarie Vassalluzzo has experimented with the unusual: parsley in an antique agate baby bathtub, thyme grown in an old cast iron hibachi, and other herbs thriving in iron pots, teapots, kettles, even an old shoe. Her favorite container was a pre-World War I iron wheelbarrow used to grow

a large crop of basil. She cautions that punching holes in the bottom of the container and adding a layer of pebbles at the bottom are necessary for proper drainage.

soil

Most of the panel agreed that herbs grow best in a planting mix with good drainage. Sally Reath, one of the Philadelphia area's master propagators, doesn't even use natural soil in her potting mix. A half-sand, half-peat mix makes an all-purpose friable medium for her growing needs. Cecily doesn't use any natural soil either. Her recipe consists of one-part of her own compost, one-part sand, and one-part perlite. In fact, she loves mixing soil, "better than baking a cake." Now she's beginning to use Pro-Mix as an experiment.

Pro-Mix is Libby Goldstein's basic general soil mix, lightened up with a little traction grit for drainage. Before she plants in it, she wets it down well with warm water and a little liquid seaweed. Why seaweed? "Well it's a nice idea, and maybe it has antibiotic activity. I know I get practically no damp-off." Blanche Epps, a community garden organizer in West Philadelphia and an avid Harvest Show entrant and winner, uses "unrefined soil, earthy, with rocks, sand, and other bits." Last year she gathered river bed soil from Cobbs Creek to support a first-prize winning crop of basil in the September event.

winter growing conditions

In order to get a full picture of their watering and fertilizing practices, we must look at both the growers' summer and winter growing conditions.

All of the "panel" put most of their herbs outside in full sun from approximately May until October. The city dwellers take advantage of fall's usual later arrival and leave herbs outside as late as early December. Everyone agrees that they allow their containers of perennial herbs to dry out between waterings. The length of time between waterings depends on the type of containers, the soil mix, and the weather. (Blanche Epps, in fact, only wets down the clay pots during the summer, seldom top-watering her herbs.) The annual herbs all receive more water because they are growing so fast and require constant moisture.

The winter growing conditions vary a lot among these growers. Reath and Clark have ground level greenhouses in which most of their herbs overwinter. Their plants get optimum light exposure and good humidity control. Because Reath's automatic mist system keeps the humidity suffi-



Rosemarie Vassalluzzo's family heirloom was filled with a layer of perlite and sand, followed by leaf compost, peat and topsoil. In this ideal container the basil was surrounded with a variety of parsley. Within weeks purple basil, lemon basil, and lots of green leaf basil were growing lushly.

ciently high, she waters only once every three days during the winter with tepid water, still keeping the herbs on the dry side. Clark waters hers daily, on the other hand.

Kieser uses the second floor south-facing bay window of his West Philadelphia house for his herbarium. With a temperature that ranges from 58° to 62°F and a low humidity condition typical of heated houses in the winter, he waters about three times a week.

In addition to her windowsill, Goldstein also practices winter gardening in her cellar with two banks of a 48-watt combination

of cool and warm white fluorescent tubes. The cellar temperature remains about 50°F, and a weekly run of the washer and dryer in the same room pushes the humidity to a higher level that benefits the plants. She keeps the cuttings and seedlings about 1 in. to 2 in. from the lights, and waters when dry, approximately once a week. The lights have been the winter home for rosemary, silver thyme, and, at one time, a collection of 12 different kinds of basil — a "true blind passion." A small hydroponic unit also supported this winter Italian parsley, basil and a lemon thyme, alongside flourishing watercress and

mâche (a French lettuce-like vegetable).

Besides keeping her bay and star anise in the house year-round, Blanche Epps brings in the scented geraniums and the lemon verbena and places them on windowsills throughout the house. Everything else, an extensive eclectic collection of perennial herbs, stays outside for most of the winter, many cut back severely. Around mid-February, she gives the plants a good soaking overnight and then brings them into her basement to a table top to break their dormancy. Towards the end of March she begins to put them back outside after the temperature goes above 35°F to give them a good early start for spring.

I usually left most of my herbs outside also. The rosemary and myrtus trained as standards spent the winter in the greenhouse or on a windowsill, as did the tender lavenders and of course the scented geraniums. My south-facing roof top greenhouse, though, was too hot and too dry, and I don't think that many of them got the proper dormancy or cooler conditions they would have liked. And my winter gardening habits are uneven at best. Sometimes plants would get watered only once every four or five days, and during sunny periods, it just wasn't enough. Survival rate was never as high as I hoped.

fertilizing

The "panel" unanimously disagreed on fertilizing practices. I am from the school of thought that says perennial herbs should be fed seldom to encourage slow compact growth and a greater concentration of oils in their leaves. I fertilized the perennials about once a month from March to July with Peter's General Purpose 20-20-20 soluble liquid fertilizer. That's it. I fertilized annual herbs, such as basil and sweet marjoram, more often and into September.

At the other end of the scale, Cecily feeds hers daily with a very dilute solution of Peter's plant food from mid-January to the Harvest Show. Looking at her outstanding specimens, who can fault that practice? Frank fertilizes his plants with Miracle-Gro every two weeks from March to September. Then when he brings them inside mid-fall, he gives them another good feeding to help them through their change in environment. Libby will fertilize in the winter as long as the plant is putting out new growth and leaves, although her regular program of feeding runs from mid-January to September. She feeds the plants under lights about twice a month throughout the year. Like Sally Reath she uses a little fish emulsion every now and then. Sally claims

continued

that "it's a change of diet they might like. Blanche's feeding pattern also includes a twice monthly dose of a horse manure tea.

grooming

Grooming plants in containers is a good horticultural practice: removing dead and dying leaves, infected plant parts and opening up centers to permit good air circulation. Good grooming of container-grown herbs is essential if they are trained in shapes as standards or as topiaries. For Cecily, pruning is the most satisfying aspect of growing plants. She knows every branch of her myrtus and rosemary because she takes such care in keeping her plants shaped. She cautions never to groom a whole plant in one day, because it is a tedious job that requires a rest in between stints to maintain perspective. Sally Reath agrees that pruning "show" plants is an on-going process. Her last pruning is in September and she cuts back some of her herbs severely to winter over, as do several other "panel" members who bring them inside.

Basically, insects don't usually attack herbs, especially outside where rain and wind and humidity keep down the populations. It's the indoor culture of any plants that attracts the most insects, and herbs are not immune, particularly during the winter months when insects thrive in enclosed places featuring lower humidity and air circulation, and higher heat.

A list of our biggest problems sounds like a *Who's Who* of the sucking insect world. Frank Kieser effectively washes the whitefly off his rosemary with Ivory soap. He has put spider mite-infected nutmeg geraniums in the shower for several washings, ineffectively. In fact, the plants are now dead. He needs to follow Libby's practice — trashing them. On the other hand, she couldn't toss her prize bay plant infested with scale two years ago. First, she fed it a systemic insecticide and swabbed alcohol on every leaf. It didn't do the whole job. She cut it back by almost half, continued the alcohol treatment, and now feels that it is free of scale and that the systemic is no longer present in the leaves. So it's ready to be used for cooking.

Cecily has hand-picked the scale off her myrtus and feels that Malathion is most helpful in taking care of that pest. She also uses an Ortho No-Pest Strip in her greenhouse to keep down the insect problem. I've had mealy bugs on just about everything at one time or another, particularly pesky on myrtus, sage, and lavender. I use

the alcohol and shower method, too, and this treatment has kept problems down to an acceptable level. Kelthane for mites and Malathion for most other sucking insects are my last resorts for major invasions. Sally Reath uses Orthene for both her sucking and chewing insect problems on her trained herbs not used for cooking. Respect chemical insecticides and read labels carefully, especially when treating herbs that are consumed.

Gardeners should be aware of a potential chemical hazard when growing plants in wooden window boxes or barrels. A few years ago I used Woodlife as a preservative on my roof deck and window boxes. On that lovely sunny, spring day, the Woodlife evaporated and the fumes destroyed most of the emerging herbs and perennials. Cuprinol has been recom-

mended to me as the only safe wood preservative to use around plants.

Growing herbs in containers is certainly an art, not a science. True, many of the practices used by these panel members are proven horticultural techniques. Yet each grower's individual approaches to good gardening culture and inspired creations have produced outstanding container-grown specimens. They all urge the reader to try the fascinating and practical art of growing herbs in containers.

J. Blaine Bonham is director of Pennsylvania Horticultural Society's Philadelphia Green project.

RECOMMENDED HERBS FOR CONTAINER CULTURE

Compiled from the experiences of the seven gardeners cited in the article.

PERENNIALS

Tender/Semi-hardy

(bring indoors for the winter)

bay
cardamom
curry plant
lemon verbena
lavender varieties
myrtus*
rosemary*
scented geraniums
star anise

In addition, panelists recommend bringing inside some variegated sages and thymes.

Hardy

(Can remain outdoors. Many of these plants have been overwintered inside in a semi-dormant state, with varying degrees of success.)

artemisia.
wormwood
southernwood
Silver Mound
chives and garlic chives* **
catmint
camomile
dittany of crete
germander
horehound
lemon balm
oregano varieties*
rue
sage - garden variety* **
salad burnet

santolina
spearmint and other mints
tarragon
thyme varieties*
winter savory
woolly lamb's ears

ANNUALS

(Can be brought inside in fall for a few months before they decline. Seeds are sown in spring for new plants.)

basil varieties*
chervil
coriander (reseeds freely)
fennel - green and bronze
parsley (a biennial that is usually treated as an annual)
sweet marjoram*
summer savory
tobacco

HERBS THAT HAVE BEEN PROBLEMS FOR SOME

(Some of these may appear on the "best" lists also. What is easy for one is not always the same for another. Most were problems associated with overwintering indoors.)

basil
bay
corsican mint
dill
dittany of crete
lemon verbena
pineapple sage
sweet woodruff
tricolor sage

*Rated the best overall and easiest container-grown herbs.


**Most successful of this group for overwintering indoors.



Triple Oaks Nursery

photo by Diane Campbell

Lay Down Your Trowel & Clippers AND VISIT SOME HERB GARDENS

 by Joanna Reed

With the interest in herbs so generally widespread and intense today, it is hard to believe that a mere 50 years ago, seven women in Boston, concerned over the rapidly diminishing use and knowledge of this essential group of plants founded a society dedicated to the study and preservation of these fragrant, tasty, useful plants, lest they be totally forgotten.

Within 15 or 20 years, a smattering of herb gardens were scattered across the country. A few books were on the market setting forth the basic guidelines for growing and harvesting herbs in the various climates of North America, quite different from the milder climates of England, Southern France and Italy.

What a boon for us today, this heady resurgence of delight in these age old plants: plants used for centuries on end to flavor and preserve foods, to cure wounds and ailments, to freshen abodes, to perfume persons and linens and to dye silks, cottons and wools; plants that have con-

tinuously played an important role in the life and commerce of the world throughout history.

Today's cooks, domestic or professional, neophyte or master, constantly rely on herbs freshly grown and harvested from a garden or readily purchased in ever widening variety, dried and fresh from local stores, to flavor and garnish the foods they prepare.

Devotees to fragrance and perfume busy themselves drying leaves, flowers, seeds and pods, distilling oils and blending these ingredients into sachets, potpourri, soaps and lotions. Wayside and garden plants alike are gathered for dying yarns used in knitting, weaving and embroidery.

Nursery and seed catalog lists of available herbs grow longer each year, including once rare, ardously sought and sparingly shared seed of unusual varieties.

Certainly a herbal renaissance. Many of us are part of this renaissance, growing

herbs in our gardens, letting the evergreen or evergray subshrubs spread into textured mats or clipping them into tidy precise edges and hedges to surround colorful and aromatic companions. The fresh fragrance emitted from thyme, lavender, mint and rosemary make even hot weather weeding and clipping almost pure pleasure. A visit to one or more of the many herb gardens open to the public is not only equally pleasurable but much less fatiguing.

These gardens are as diverse in size and design as are the plants under this common heading. The majority have been planted and are being maintained by volunteers who readily share their knowledge and expertise about herbs, to enhance a public park or to create an island of beauty within city or town. Some are highly sophisticated twentieth century adaptations of an Elizabethan art form; others are simple, direct and functional. Each has a charm of its own.

Some of the gardens have been design-

continued



Well Sweep Herb Farm

ed, planted and beautifully maintained by commercial growers, as showcases for the wonderful plants they sell. Some are idea gardens, to teach and inspire us, the gardening public.

So lay down your trowel and clippers, invite a friend to share an adventure and be off. You will find fragrance, color, form and textures. You will delight in how combinations of familiar plants, unexpectedly contrast with other flowers and foliage. You will be bathed in scents: sweet, aromatic, fruity, piquant, minty, at times even exotic. Tiny thyme leaves, some bright, bright green hugging the ground in flat mats, others bronzy, purplish green in stiff upright clumps will make the furry silver rosettes of *Salvia argentea* seem larger, more spectacular by contrast. Feathery masses of dill, fennel and sweet Annie lend a feel of soft, misty unreality while the familiar pungence of basil and oreganos bid us crush and taste their leaves. Rosemary and lavender, green and gray, take us back in time. The *Artemisias* in shades of gray and silver, recall herb strewn manor houses and monks brewing cordials and elixirs in ancient monasteries. Sweet bay, myrtle and rue bring to mind toga clad Romans and Greeks bedecked in wreaths and carrying garlands.

You will glean ideas on companion planting for pest control as well as beauty. You will become increasingly aware of the importance of these modest plants to our forebears and their teachers, the Indians. They were of the utmost importance until their mid-19th century decline. You will come away inspired to grow additional plants for specific uses and harvests or to incorporate them in established areas of your garden for sheer enchantment and beautification.

One such trip will generate the desire for more visits to more gardens. How fortunate

we are to have more such gardens, within easy driving distance, than could have been found throughout our country in the recent past.

We have these gardens through the generosity and energy of a devoted band of volunteers. Gardeners, like you and I, who find time to nourish and tend these plants in gardens other than their own. In common with our own gardens, these "open gardens" will have moments of supreme beauty and perfection but they also will have an occasional dog day or week when people and plant life alike suffer from heat, humidity and temporary but unavoidable neglect. If your visit should fall on such a day, please remember the times when you as a gardener have wished that the visitor by your side had come the week before when a favorite plant was its glorious best, or were coming next week after the edges had been crisped and straightened and the grass had been newly mown.

Enough said; here is a list of herb gardens, open for your pleasure. Even more are waiting to be discovered. Your editor and I hope that you will give us the names and addresses of any and all such gardens so they can be listed at a later date.

HERB GARDENS TO VISIT

Each garden has a story of its own. Discovering these varied histories should be part of the excitement of such visits.

The Physic Garden of the Pennsylvania Hospital

8th and Pine Sts., Philadelphia, PA 19107 (Entrance through the hospital)

Phone: 215-829-3971

Hours: Daily, dawn to dusk

Admission: Free

In 1774 at a meeting of the Board of Managers of our nation's first hospital, co-founded in 1751 by Benjamin Franklin and

Dr. Thomas Bond, a proposal was made to establish a botanical garden on the hospital grounds. Not until 200 years later was such a garden planted through the generosity and sustained concern of the Philadelphia Committee of the Garden Club of America, Friends of Pennsylvania Hospital and staff members of the hospital. The garden was designed by Martha Ludes Garra, planted and maintained by members of the Philadelphia Committee.

The Herb Garden at the College of Physicians of Philadelphia

19 South 22nd St., Philadelphia, PA 19103 (22nd St. between Chestnut and Market Sts., entrance through the building)

Phone: 215-561-6050

Hours: Open Monday through Friday, 9:00 am - 5:00 pm

Admission: Free

Maintained by the Women's Committee of the College.

Pennsbury Manor

400 Pennsbury Memorial Lane, Morrisville, PA 19067

Phone: 215-946-0400

Hours: Tuesday through Saturday 9:00 am to 5:00 pm,

Sunday Noon to 5:00 pm

Admission: \$2.50 adults, \$1.00 children (6-17), under 6 free

Currently this garden is in a state of transition while research using mid-17th century manuscripts and William Penn's first wife's receipt books (reprint available) continues. The result will be an excitingly authentic garden to visit and study.

Large groups call for reservations (more than 5).

Graeme Park

859 County Line Road, Horsham, PA 19044

Phone: 215-343-0965

Hours: Wednesday through Saturday 9:00 am to 5:00 pm,

Sunday Noon to 5:00 pm

Admission: \$1.50 adults, \$1.00 seniors (65 and older), \$.50 children (6-17)

The Physick Garden at Graeme Park was established to enhance the interpretation of Dr. Graeme's 18th century medical practice.

Hope Lodge

553 Bethlehem Pike, Fort Washington, PA 19034

Phone: 215-646-1595

Hours: Tuesday through Saturday 9:00 am to 5:00 pm,

Sunday Noon to 5:00 pm

Admission: \$1.50 adults, \$1.00 seniors (65 and over),

\$.50 children (6-17)

A small herb garden plus herbs incorporated in extensive flower borders. Maintained by the Philadelphia Unit of the Herb Society of America and staff members of Hope Lodge.

Hibbs House

Routes 532 and 32 (Adjacent to the Visitors Center)

Washington Crossing State Park,
Washington Crossing, PA 18977

Phone: 215-493-8213 or 493-4076 (State Park Tour Information)

Hours: Walking tours - Monday through Saturday 9:30 am, 11:00 am, 1:30 pm, 3:30 pm.

Sunday 1:30 pm and 3:30 pm

Admission: \$1.50 per person*

Herb and vegetable garden is harvested for fireplace cooking demonstrations, also quilting, spinning and herbal wreath making, by ladies in colonial costumes. Maintained by the Washington Crossing Garden Club and staff members.

*This price is for a combined tour package that includes Hibbs House, McConkey Ferry Inn, Taylor House and Thompson-Neely House.

The Thompson-Neely House 'House of Decision'

Route 32, Washington Crossing, PA 18977

Phone: 215-493-4076 (State Park Tour Information)

Hours: (See description under Hibbs House)

Admission: \$1.50 per person

The garden is scheduled to open in the spring of 1985 after restoration and replanting done by the Delaware Valley Unit of the Herb Society of America.

Bowman's Hill Wildflower Preserve

Route 32, Washington Crossing, PA 18977

(located in the northern section of Washington Crossing State Park)

Phone: 215-862-2924

Hours: 9:00 am to 4:30 pm winter,
9:00 am to 5:00 pm summer

Admission: Donation

While not an herb garden the Preserve is a place to see many native plants used by Indians and early settlers alike.

Prallsville Mill

Route 29, North of Stockton, NJ 08559

Another garden which will be planted spring 1985 and maintained by the Delaware Valley Unit of the Herb Society of America. Emphasis will be on historical and industrial plants in conjunction with an educational program scheduled for 1986.

Wick House Garden

Jockey Hollow Historical Park, Tempe

Wick Rd. (off Route 202 between Somer-

ville and Morristown, NJ)

Phone: 201-539-2085

Hours: 9:00 am to 5:00 pm
(7 days a week)

Admission: Free

A fine example of an early colonial garden for herbs and vegetables, researched, planted and maintained by the Northern New Jersey Unit of the Herb Society of America.

Cross Estate

Leddel Road off Tempe Wick Rd. in the vicinity of the Jockey Hollow Historical Park (see above).

Phone: 201-539-2085

Hours: 9:00 am til dusk (7 days a week)

Admission: Free

An herb garden plus a perennial garden including herbs, maintained by Northern New Jersey Unit of the Herb Society of America as well as staff members.

Well Sweep Herb Farm

Mt. Bethel Rd., Port Murray, NJ 07865

- Commercial

Phone: 201-852-5390

Hours: Tuesday through Saturday
9:30 am to 5:00 pm

Admission: Free

An outstandingly beautiful garden for the display of herbs, at its best during July and August. A full range of plants are for sale including rare and unusual varieties and beautiful dried materials.

Peter Wentz Farmstead

P.O. Box 240, Worcester, PA 19490

Phone: 215-584-5104

Hours: Tuesday through Saturday
10:00 am to 3:30 pm,
Sunday Noon to 3:30 pm

Admission: Donation

Authentic German kitchen garden, with typical 18th century plantings of flowers, herbs and vegetables. Established by the Norristown Garden Club, now maintained by volunteers.

Heckler Plains Garden

Landis and Morris Roads, Harleysville, PA 19438

A community project involving many people within the area. Four main beds hold herbs as well as vegetables.

John J. Tyler Arboretum

515 Painter Road, off Route 352, south of Route 3

P.O. Box 216, Lima, PA 19037

Phone: 215-566-9133

Hours: Grounds, daily 8:00 am to 8:00 pm

Admission: \$2.00 adults, \$1.00 children

Two handsome display borders of fragrant and colorful herbs. Maintained by the Philadelphia Unit of the Herb Society of America whose members are available each Wednesday morning to answer questions as they tend the plants.

Longwood Gardens

Routes 52 and 1, Kennett Square, PA 19348

Phone: 215-388-6741

Hours: Open every day of the year,
9:00 am to 6:00 pm

Admission: \$5.00 adults, \$1.00 children
6-14, under 6 free

Handsome new herb display and idea garden, dedicated in the summer of 1984. Herbs are planted in four beds according to uses, medicinal, culinary, fragrant and industrial plus two traditional knots.

Bartram's Garden

54th and Lindbergh Blvd., Philadelphia, PA 19143

Phone: 215-729-5281

Hours: Garden open daily Tuesday through Friday 10:00 am to 4:00 pm. Weekend also, May through October

Admission: \$2.00 adults, \$1.00 children

"The Common Flower Garden" contains appropriate 18th century flowers and herbs with one central bed for herbs alone. Maintained by volunteers.

continued



Specialty garden area of the National Herb Garden, U.S. National Arboretum

photo by Holly Shimizu



College of Physicians

Triple Oaks Nursery

Delsea Drive, Route 47, Franklinville, NJ 08322 - Commercial
Phone: 609-694-4272
Hours: Open 7 days a week til dusk during the season: April 15 to June 30. Close at 5:00 pm on weekends.

Admission: Free

An attractive display garden for the many varieties of herb plants that are for sale. The garden is also harvested for wreaths and other herb-related products.

Swiss Pines

Charlestown Road off Route 29, between Phoenixville and Frazer
Phone: 215-933-6916
Hours: Monday - Friday 10:00 am to 4:00 pm.
Saturday 9:00 am to 11:00 am.
Closed December 15 - March 15

Admission: Free

A sampling of culinary, fragrant and medicinal herbs maintained by a volunteer.

Giunta's Herb Farm

Todd & White School House Roads, Honey Brook, PA 19344 - Commercial
Phone: 215-273-2863
Hours: Monday through Saturday 10:00 am to 5:00 pm. April 15 through October 15. They will be on vacation during July/August, so call before you come.

Admission: Free

The herbs grown in the attractive display garden are harvested and dried in The Herb Loft. Plants and dried products are available.

The Village Herb Shop

On Route 322, Blue Ball, PA 17506 - Commercial
Phone: 717-354-6494
Hours: Monday - Friday 10:00 am - 5:00 pm.
Saturday 10:00 am - 4:00 pm

Admission: Free

A small herb garden for the purpose of display, identification and harvesting.

Rodale Research Center

Fiegfriedale Road, Kutztown, PA, off Route 222, south of the town of Maxatawny, between Kutztown and Allentown
Phone: 215-967-5171
Hours: May to October, dawn to dusk
Admission: Free

Extensive demonstration gardens. The ones featuring herbs cover culinary, aromatic, ornamental, medicinal herbs and companion planting for insect control, a self-guided tour.

Folk Craft Center

Mt. Sidney Road, off Route 340, west of Smoketown in Witmer, PA 17585
Phone: 717-397-3609
Hours: Mid-April to November, 9:30 am - 5:00 pm Monday - Saturday
Admission: \$3.50 adults, \$3.00 seniors, \$2.50 children 6-12, under 6 free. Family rate \$7.50.

Country craft museum, the garden consists of a "German Four Square Garden" of vegetables, herbs and flowers, a Victorian door yard garden and a dye garden.

Rock Ford Plantation

881 Rock Ford Road, Lancaster, PA 17602
Phone: 717-392-7223

Hours: Tuesday through Saturday 10:00 am to 4:00 pm,
Sunday Noon to 4:00 pm.
April to Nov.

Admission: \$2.50 adults, \$1.50 children under 18, under 6 free

Herb Garden featuring plants in use during the 18th and 19th centuries. Research-ed, built and maintained by the Susquehanna Unit, the Herb Society of America

The Rosemary House

120 S. Market St., Mechanicsburg, PA 17055 - Commercial
Phone: 717-697-5111
Hours: April to December, Tuesday to Saturday 10:00 am - 5:00 pm,
Friday 10:00 am - 8:00 pm,
closed Sunday and Monday

Admission: Free

The herb garden is for display and harvesting; it includes roses. Plants and herbal wreaths, etc., are for sale.

This list probably covers only a percentage of the herb gardens that would be pleasant to visit. Once again may I ask you to notify our editor of those we have missed and accept my apologies for not listing them. Where admissions are noted, it is usually for the house not the garden.

I would be remiss not to bring to your attention a very beautiful and special garden, yours – **The National Herb Garden** – a gift to you and your fellow citizens of the United States from the Herb Society of America. It is located at the National Arboretum, 3501 New York Ave. NE, Washington, DC 20002 (202-475-4815). "Thousands of useful plants are growing within this beautiful two and one-half acres. The design concept is of three separate but closely related sections – the Knot Garden, the Historic Rose Garden, and the Specialty Gardens," a quote from the handbook which contains a summary of each herb to be found in the specialty gardens, common and botanical name, uses, and place of origin.

Allow ample time to visit "your" garden, just to be sure not to miss it even though you might have to again lay down your trowel and clippers.

Joanna Reed has visited hundreds of herb gardens across America. She designed Fragrant Garden at the U.S. National Arboretum, in Washington, DC. Reed's garden in Malvern is outstanding, and people travel great distances to see it. She has written about it eloquently in *The American Woman's Garden* by Rosemary Verey and Ellen Samuels (A New York Graphic Society Book, Little, Brown & Co., Boston, 1984). Her garden was featured on the cover of *Green Scene* (Jan. 1978).



Daffodils lend color to herbs in the greenhouse. Tender lavenders in the background: *Lavandula dentata*, *L. pinnata* and *L. lanata*. Curly parsley (*Petroselinum crispum*) and golden thyme (*Thymus x citriodorus* 'Aureus') in the foreground.

HELP ME MAKE IT THROUGH THE WINTER

by Joyce M. Douglas

"Help me make it through the winter," sounds like the lament of a Portuguese fado singer. Have you thought of going to Portugal for the winter and forgetting the whole thing? No? You say there's life after winter, and you can't face spring without some of your favorite hard-to-find herbs or non-seed herb plants like pineapple sage, sweet marjoram, sweet bay, lemon verbena or the scented geraniums.

Some of us, for reasons practical or sentimental, have to lend nature a hand or a push to start *the season*, especially when we know we have the means to do so. And I don't mean only those with greenhouses; anyone can produce new herb plants ready to set out when May comes around next year.

starting new plants in the fall

Propagate tender or hardy plants using cuttings, preferably during July through September. Begin by preparing a flat with a mixture of one-half Pro-Mix and one-half coarse sand to a depth of 4 in., or use the same mixture in 3 in. square plastic pots that fit into matching carrying trays for convenience. Peat pots can also be used, but are quick to dry out. Water the mixture and let drain. Using 3½ in. to 4 in. plant cuttings that have been cut just below a leaf node, remove lower leaves and flower buds. Dip in Rootone, then place in holes made with a dowel or a thick pencil in the flat or indi-

vidual pot. Cuttings should be made from the current year's growth; avoid weak or fleshy growth. After the cuttings are all in place and labeled, water with Transplantone according to directions. Set flats or trays on bricks (one at each corner) under a tree in dappled shade or under a lathe arrangement with proper air circulation, which is important. Take care lest the cuttings become too dry. Water when needed; positioning on bricks will allow for drainage and discourage slugs. Good air circulation will prevent fungus and insect problems. Fertilize every time you water with any general purpose plant fertilizer, using half-strength solutions.

when cuttings have become well established and good roots are formed, then you have a choice of the following

Hardy Perennials

Vegetable Garden. In August or early September, whenever ready, remove rooted cuttings from pots or flats and plant out in rows. Keep watered and when frost comes, mulch with salt hay or straw. The following May when you dig up these plants, they will be robust, healthy herbs with strong root formation and will suffer no set back when placed permanently into your flower beds, border, vegetable garden or other areas.

Field Rows. Same instructions as for the vegetable garden, but allow more room if

you want a lot of plants or more of one species.

Cold Frame. Same instructions as above. Place flats or pots in cold frame after the first light frost for hardy perennials or sooner if semi-hardy. You may want to repot your rooted cuttings in larger pots, adding a little bonemeal and lime as most herbs seem to prefer this. Protect with salt hay, straw or extruded plastic packaging material if you feel it is needed. Avoid sawdust since termites love it.

Tender Herbs

Greenhouse. Remove rooted cuttings from flats or pots and place directly in a bench full of soil or set pots of cuttings on crushed stone or sink into whatever drainage material you use. Repot if plants are needing it, adding lime and gritty potting soil (add coarse sand to packaged potting soil) for good drainage. Don't pack too closely together; give plants room to breathe. Herbs need full sun and cool temperatures. (I allow greenhouse temperature to go down to 49°F at night.) In addition to cuttings, don't forget to pot up those larger rosemaries, tender lavenders, calendulas, etc. (see list) late in August, to bring inside in September. They will lend character and dignity to the scene. Again, good air circulation and humidity (50%) are a must.

Porch or Window. A cool but non-freez-

continued



Lavender cutting, rooted in oasis



Herbs on a sunny windowsill get help from a light. (See page 25.)



Herb cuttings growing on a greenhouse bench. (See page 25.)

ing, sunny porch or large, draft-free sunny window is suitable for larger pots of tender herb plants, dug up in August and potted as above. They must have four to five hours of sun a day and cool temperatures at night. A large, plastic tray with pebbles will suit admirably to place the pots on. There is nothing like a sunny Victorian parlor window full of scented geraniums dispelling fragrant oils into the room.

Windowsills. If you think you can't have herbs over the winter but do have a well-lighted spacious windowsill with at least four to five hours of direct sun, try growing herbs that don't grow too big. Two or three glass shelves will give you extra room or a single waterproof plastic tray with pebbles for pots or a plastic windowbox into which plants are planted directly is possible. Small plants can be potted up in August and kept outdoors to become well established and brought into the house in September and placed on pebbles on the windowsill tray. If using commercial nursery plants, check for white fly and mites before bringing them into the house. Shower indi-

vidual pots in the sink every week and mist those in a windowbox to discourage drying out. Cover the pebbles in the tray with just enough water to keep up the humidity.

Failure with herbs indoors usually means too little light, too much heat, low humidity and small pots. Herbs won't be as fragrant or as robust as they are outdoors and should be trimmed back to keep them from getting leggy.

Under Lights. Lacking sufficient sun, you can install fluorescent lights specifically for growing plants. These are available through leading plant catalogs or in hardware stores or garden centers. Plants are usually placed on shelves 6-12 in. beneath the light source for 14-16 hours out of the 24, no more. Get a timer for the lights and save yourself from getting up in the middle of the night.

Oasis Method. A fellow Herb Society member, Sally Sharples, has successfully used oasis for scented geranium cuttings. She cut the oasis into cubes and stuck the cuttings directly into saturated cubes, using *no* Rootone. To keep moistened, they were placed in a tray with very little water. Started in October, placed on a cool porch without fertilizer, good roots were formed by early December. Whole cubes containing the rooted cuttings were then placed in pots with soil and placed under lights for the winter.

outside during the winter

Depending on their location in the garden, your "hardy" perennials left outside for the winter may need the protection of oak leaves, salt hay or evergreen branches lightly applied over them after the ground is frozen. Check for heaving during the winter and press any heaved plants back into the ground.

If you have a surplus of rosemaries, try leaving one in place if it's growing against a wall. A mild winter sometimes allows one to come through and leaf out in spring. To cut back or not to cut back — some people like to look at seed heads against the snow and allow the birds to enjoy them. If you must be neat, don't cut back more than one-quarter of the plant. During the summer you will have harvested your artemesia, achillea, and others for dried arrangements, cutting down these branches so that only 2-3 in. remain. Even if you do nothing, herb plants never look ugly, but they will look better in the spring if they are groomed and cosseted in the fall.

Even though winter seems far away, you can begin to mull over, while relaxing in the sun, some ideas to start in August and

carry into fall to guarantee some fresh greenness in winter. In addition to growing plants some herbal by-products of summer will help you make it through — herb jellies, vinegars, liquors, potpourri, dried wreaths and bouquets. So, grow herbs; sip

chartreuse, sample sachet or sniff snuff. These are herbal dividends.

Joyce M. Douglas is the chair of The Philadelphia Unit of the Herb Society of America. She is also past president of the Twin Valleys Garden Club.

PLANTS THAT CAN MAKE IT THROUGH THE WINTER

Choose hardy *perennial* herb cuttings for the vegetable garden, field row or cold frame.

Choose *tender* herbs for the following:

The Greenhouse

(for winter pleasure)

pot marigold
borage
calamondin orange
chives
lemon verbena
curly parsley
plain parsley
sweet marjoram
rosemary
tricolor sage
lemon thyme
jasmine
scented geraniums
tender lavenders
pineapple sage
sweet bay
nasturtium

Calendula officinalis
Borago officinalis
Citris mitis
Allium schoenoprasum
Aloysia triphylla
Petroselinum crispum crispum
Petroselinum crispum neapolitanum
Origanum majorana
Rosmarinus officinalis
Salvia officinalis 'Tricolor'
Thymus x citriodorus
Jasminum officinale
Pelargonium spp.
Lavandula spp.
Salvia elegans
Laurus nobilis
Tropaeolum majus

Indoors

(large sunny window in pots)

cardamom
cinnamon bay
dittany of crete
lemon verbena
sweet bay
sweet olive
scented geraniums
rosemary

Elettaria cardamomum
Cinnamomum camphora
Origanum dictamnus
Aloysia triphyllum
Laurus nobilis
Osmanthus fragrans
Pelargonium spp.
Rosmarinus officinalis

Windowsills

chives
curly parsley
plain parsley
orange mint
winter savory
summer savory
English finger
bowl geranium
lemon balm
white mustard
woolly thyme
small leaf bush basil
rosemary
dittany of crete

Allium schoenoprasum
Petroselinum crispum
Petroselinum crispum neapolitanum
Mentha x piperita citrata
Satureja montana
Satureja hortensis

Pelargonium x limoneum


Melissa officinalis
Brassica alba
Thymus praecox subsp. *articus* 'Lanuginosus'
Ocimum basilicum 'Minimum'
Rosmarinus officinalis
Origanum dictamnus

Under Lights

scented geraniums
sweet woodruff
orange mint
tender lavenders

Pelargonium spp.
Galium odoratum
Mentha x piperata citrata
Lavandula pinnata, *L. dentata*, *L. stoechas*,
L. lanata, *L. viridis*, etc.
Ocimum basilicum

sweet basil



HERBS: Good Medicine or Bad

 by Ann Jarmusch

Used for healing, will herbs cure you, kill you or leave you as they found you? Who has the answers – the naturopaths, homeopaths, allopaths or pharmacologists? Ann Jarmusch explores the possibilities within each of these disciplines.

The pink and white periwinkles (*Catharanthus roseus*) in the large mortar are the source of two anti-cancer alkaloids used to treat Hodgkins disease and childhood leukemia. The delicate flower in the front is Indian snakeroot (*Rauvolfia serpentina*) whose root is the source of reserpine widely used as a hypertensive sedative and tranquilizer. The red tablets are Squibb's "Raudixin" made from the root of *Rauvolfia*.

The folklore of medicinal herbs is charged with a romance not related to today's drugstore products. The act of venturing into a field — or forest, or jungle — as soon as the morning dew evaporates to gather fresh peppermint, red clover, and wild indigo for drying, brewing, or shaking into a tincture, is soothing even before these herbs are put to work for relief and healing. More appealing by far than driving through traffic, fighting for parking, and confronting a wall of cardboard- and plastic-packaged drugs to be carried to the check-out line.

To confess my 1960s upbringing and preference for things natural does not adequately explain my desire to learn more about herbal healing possibilities. Because I know from personal experience that herb teas can produce beneficial effects, effects that have been passed down for centuries, it is curious to me that they are paid so little heed by today's established medical practitioners.

In researching this article, I discovered controversial bodies of knowledge — traditional approaches to healing — that some say work more gently, safely, and less expensively than do many pharmaceuticals. The leaves and flowers, stems and bark, roots and rhizomes of herbs, form, along with other natural substances, the sole medicine chest to millions the world over. Knowing this, the World Health Organization, equipped with a program manager for traditional medicine, takes the position that indigenous medicine works best.

As for modern medicine, about half of all prescription drug ingredients come from natural sources, according to Ara Der Marderosian, Professor of Pharmacognosy at Philadelphia College of Pharmacy and Science, a fact he says surprises the physicians he's told. Dr. Der Marderosian cites antibiotics, oral contraceptives, the digitalis leaf glycosides for heart conditions, and opium derivatives for pain, among others. In addition, he says, countless plants have served as chemical models for synthetic drugs now on the market.

If this legacy were not enough, herbs are rich in glamour and intrigue. Imagine opening King Tut's tomb and finding among the treasures mandrake seeds (*Mandragora officinarum*), presumably deposited there to serve the boy-king in the afterlife as a pain-reliever, narcotic, and aphrodisiac. Think of gypsies crisscrossing Europe, selling a healing rosemary lotion named "The Queen of Hungary's Water" for the herb's admirer, or Daniel Boone searching Virginia's wilds for the American species of

ginseng (*Panax quinquefolia*) for export to an eager China.

Looking deeper, the spiritual component of successful herb therapy spans not only centuries but also cultures and continents. Both the Old and New Testaments contain numerous references to medicinal herbs and trees, which surely inspired St. Fiacre, patron saint of gardeners, in his herb and vegetable cultivation to heal and feed the poor in seventh-century France.

African herbalists, divine healers, and witch doctors all combine herbal remedies with doses of religion and psychology proven effective in their societies. Today's

As for modern medicine, about half of all prescription drug ingredients come from natural sources: ... antibiotics, oral contraceptives, the digitalis leaf glycosides for heart conditions, and opium derivatives for pain, among others.

Hindus continue medical practices first recorded in the Veda as early as 4,500 B.C. And Chinese doctors examine patients for outward signs of "disharmony" or "imbalance," an ancient metaphysical approach they complement with natural remedies geared to the individual.

Of course, not all of this has gone unnoticed by Westerners. Today's thriving health food stores and restaurants are a manifestation of increased consumer commitment to healthier living and an openness to some products proven first in other cultures. Herbal remedies are among the natural products prominently displayed in these stores.

Herbs are "nutritious and medicinal," notes J. H. Feingold, a licensed naturo-

pathic doctor practicing in Philadelphia. "That's why they're so good." (Botanical medicine is just one of the tools of naturopathy, a holistic approach that shuns the use of drugs and analyzes individual needs before medicating.)

herbs toxic?

Herbs rightfully enjoy a reputation for mildness and symptomatic relief, but they can also be problematic, even toxic, when consumed in massive doses or in combination with other incompatible chemicals. Some doctors warn that patients with serious conditions can be fooled into thinking they've cured themselves, thereby delaying urgently needed treatment.

The U.S. Food and Drug Administration (FDA) 10 years ago rated common herb teas and found 27 of the 171 herbs tested unsafe. They include arnica (*Arnica montana*), belladonna (*Atropa belladonna*), and lobelia (*Lobelia inflata*). While the majority (91) were pronounced safe, 53 herbs were described as "of undefined safety"; no statement was issued on the efficacy of any of the herbs studied. Herbs continue to be classified as food rather than drugs, and are not subject to the rigorous tests required of drugs before marketing.

The Herb Society of America, Inc. forbids its membership to offer advice on possible medicinal uses of herbs, in compliance with the Medical Practice Acts prohibiting laypersons from prescribing medications. "Physicians, pharmacists, and botanists are still searching for and researching plants, and identifying the chemically-active ingredients found in the plants," the by-laws read. "The Herb Society of America, Inc. believes that such investigations should be left to those trained experts."

The trouble is that the experts are divided on the safety and efficacy of herbal medications. Everyone agrees that common sense is the universal essential ingredient, but beyond that, the arguments fly. Advocates of herbalism cite its lack of side effects, natural state (where chemical impurities may be useful), and purported ability to encourage the body's own healing mechanisms to do the job.

Library and bookstore shelves hold many an attractive herbal, making self-medication a real alternative for the layperson. Some 200 natural-healing titles are available at The Penn Herb Co., Ltd. to Philadelphia and mail-order customers. Patrons of all ages, races, and religions can and do buy more than 500 herbs and 56 special blends described in an informa-

continued

SELF-MEDICATING WITH HERBAL REMEDIES

Dr. Ara Der Marderosian, Professor of Pharmacognosy at Philadelphia College of Pharmacy and Science, says that self-medication with herbal remedies can have some pitfalls and should not be tried without the advice of experienced persons. For the layperson interested in herbal remedies, he recommends *The Honest Herbal: A Sensible Guide to Herbs and Related Remedies* by Varro E. Tyler, Ph.D., published by George F. Stickley & Co., Philadelphia, 1981. Varro Tyler is the Dean of the School of Pharmacy, Nursing and Health Sciences at Purdue University.

If you would like to receive an article about herbal remedies by Der Marderosian, which appeared in the *American Druggist*, August, 1980, send a stamped, self-addressed envelope to Dr. Ara Der Marderosian, Philadelphia College of Pharmacy & Science, Philadelphia, PA 19104.

tive catalog.

"People really are interested in handling their own problems," observes Karl Ruch, Penn Herb's pharmacist in charge and a graduate of Temple University's School of Pharmacy. "No one profession has the ability to heal all problems. We realize that and work within that structure."

"Getting the populace to think of health rather than illness and to take more responsibility for their own wellness" is the goal of holistic health consultant Dale M. Brooks, who is a registered nurse practicing in the Allentown area. A Seneca Indian and master herbalist, she grew up using herbs for medicinal purposes, now grows her own, and conducts herbalism workshops.

"We didn't consider them 'home remedies' or 'Indian medicine,'" she says of the teas and poultices, decoctions and tinctures her mother, also a nurse, prepared. "It was simply the way to do it." Brooks brought up her own children the same way, but follows the M.D.'s orders when nursing.

homeopathy

Homeopathy, a branch of medicine operating out of belief in the healing properties of herbs and other natural substances, may be coming out of eclipse due to rising interest in holistic medicine and increased fears about long-range effects of certain drugs on the body. Based on the theory that "like cures like," the homeopathic physician (who first earns an M.D. degree, then trains in homeopathy) treats the patient's *symptoms* with miniscule amounts of diluted plant, animal, or mineral substances that work with the immune system to stimulate a response like that of the disease. Polio vaccines perhaps constitute the most widely recognized use of homeopathic principles.

By contrast, the American Medical Association (AMA) embodies allopathic medicine, which treats the *disease* by opposing, masking, or surgically removing it and its effects.

"The AMA doesn't like us at all. Our medical philosophy is completely different," says Donald S. Lee, a homeopathic physician and president of Boericke & Tafel, the 150-year-old Philadelphia homeopathic pharmacy now doing business in 39 countries. He also serves on a committee to promote understanding among FDA officials accustomed to dealing with giant pharmaceutical corporations.

"Homeopathy is better recognized in most every other country," he believes. As for its safety, Dr. Lee shrugs, "If you take the wrong homeopathic remedy, nothing happens."



photo by John Gouker

Among the plants used for teaching and research at the Philadelphia College of Pharmacy and Science are calendula (yellow plant in the foreground), borage (tall bluish plant), and vinca (in box to left). Ara Der Marderosian, professor of Pharmacognosy and Medicinal Chemistry at PCPS, says the plants in the S. B. Penick Greenhouse at the college may be fed with radio-labeled compounds to find out how the plants make or biosynthesize active compounds used for medicines. Or they may be checked to find the optimal time for harvesting and processing. Traditional home remedies are investigated for safety and effectiveness here also.

Among Boericke & Tafel's more than 1,700 remedies (90% of which involve herbs grown and collected around the world) is a special offering: a medicine chest containing 28 substances to combat minor ills. The price is \$42.63 including postage.

Polio vaccines perhaps constitute the most widely recognized use of homeopathic principles.

"The trouble with homeopathy is that it's a cult more than it is a science," comments Joseph R. DiPalma, M.D., a professor at Hahnemann University's School of Medicine, who specializes in pharmacology. For 15 years, he served as dean of this school, which was founded as a homeopathic medical school. Even after it converted to an AMA-endorsed allopathic curriculum (the last medical school in this country to do so), Hahnemann continued to require course work in homeopathy until 1945. Until 1959, homeopathy was offered as an elective taught by Dr. Garth Boericke.

"We don't ridicule homeopathy, we just don't use it," says Dr. DiPalma, going on to voice the usual argument that homeopathy eludes exacting scientific proof. Due to unacceptable testing methods, most recent efforts by homeopaths to demonstrate efficacy have failed to convince the medical establishment of homeopathy's merits.

Another criticism is that the homeopathic

dose is usually so diluted that the alleged healing substance cannot be measured. DiPalma and others credit the placebo* effect for homeopathy's successes; they also acknowledge the same psychological factor at work when drugs are administered.

Counters University of Pennsylvania-trained veterinarian Deva Kaur Khalsa, "In the diagnostic field, allopathic medicine excels. In treatment, it has severe deficits."

Her homeopathic Edgewood Village Veterinary Clinic in Yardley attracts patients, mostly dogs and cats, from great distances. Building her practice by telling other vets to send her their hopeless cases, Dr. Khalsa has eliminated conditions that plagued certain animals for years, and has won the respect of some of her former vet school professors and colleagues.

Using herbs to "cleanse, detoxify, rejuvenate," Dr. Khalsa, whose practice is compatible with her conversion to Sikhism, believes that a number of the owners of the animals she treats turn to homeopathy for themselves after seeing its remarkable effects on their pets.

Scientific proof probably matters far

*placebo: a harmless, unmedicated preparation given as a medicine to a patient merely to humor him, or used as a control in testing the efficacy of another medicated substance. (Webster's New World Dictionary of the American Language, Second College Edition, The World Publishing Co., 1970)



Using natural substances, including herbs, to work with the body's healing capabilities is the mainstay of homeopathy. Gentleness in patient care and medication is at work here as veterinarian, Dr. Deva Kaur Khalsa, prepares to give a cocker spaniel a tiny dose of calendula granules for an ear problem. Instead of forcing a pill down the dog's throat, she'll place the substance on the tongue, where it will naturally dissolve.

more to the health professional than to the patient detecting relief or curative action from herbalism, homeopathy, or naturopathy. "It works," is the simple refrain of those practitioners and patients satisfied with homeopathy. For some, that is enough.

Several sources say that young allopathic physicians are more interested than their seniors in homeopathy from the standpoint of wanting to know the full range of medical possibilities available to their patients. Recently, a noted homeopath gave a clinical lecture to a full house at Thomas Jefferson University, and Barbara Williams, archivist at Hahnemann University, has noticed renewed interest in alternative medicine, including its history, from her vantage point at the institution named for the father of homeopathy. Staff physicians are among those tending the 18th-century-style physic garden at Pennsylvania Hospital, and M.D.s and hospital pharmacists along with homeopaths and naturopaths are subscribing to *The Lawrence Review of Natural Substances*, a monthly newsletter documenting and assessing medicinal uses of common and exotic plants.

Studies on healing plants are being published all the time, insists Joseph Pizzorno, president of John Bastyr College of Naturopathic Medicine in Seattle. "The problem is that the medical profession doesn't read them," says this doctor, who is collecting data worldwide for a textbook intended to fill this gap.

An example is his own research project. With funds from General Nutrition Corporation, he has been studying what garlic, in the form of oil extract, can do for the healthy person and reports "good effects beyond our expectations" regarding the lowering of cholesterol and triglycerol levels plus

anti-fungal, anti-viral, and anti-bacterial properties.

Dr. Der Marderosian would like to see Western researchers follow-up on promising results from botanical medical investigations done abroad, where initial testing

The Herb Society of America, Inc. forbids its membership to offer advice on possible medicinal uses of herbs, in compliance with the Medical Practice Acts prohibiting laypersons from prescribing medications.

is permitted on humans, not animals. He is not optimistic, however, given cultural blind spots and government funding cutbacks. Nor are major pharmaceutical companies likely to resume their global searches for *materia medica* on land and sea as they did during recent decades.

Bryce Douglas, now corporate vice president for science and technology at SmithKline Beckman Corporation, was among those researchers sent around the world to unlock the secrets of healing. As the head of the company's now-defunct natural products program, Dr. Douglas's first assignment was to find aborigines in the Malaysia jungles and learn about their herbal remedies. Eventually narrowing his field from 1,000 plant candidates to one, his chemically screened plant provided "an analgesic as powerful as codeine," Douglas recalls, "but there was no need on the market for another codeine."

"Oh, yes, I was disappointed," he adds. "However, this substance was used as snuff in the bazaars in Malaysia when opium was unavailable, so the tests did verify the folklore."

Even if the established pharmaceutical and medical communities' desire for more evidence like the above were satisfied,

there are those who claim herbal and other natural remedies still would not be embraced. For one thing, pharmaceutical companies spend years and millions testing new products, and natural products cannot be patented. Many of them never show a profit. Others, like herbs, cannot be controlled by the prescription process.

Dr. Lee faults his own profession of homeopathy for its low-profile in this country. "If we would charge more and advertise more, homeopathy would probably grow faster," he suggests.

Twenty-five centuries ago, Hippocrates, called the Father of Medicine, perceived the body's power to cure itself, stressing the need for a balance of rest, work, proper diet, exercise, and recreation to maintain health. He also identified the cause of many illnesses as psychosomatic. Sound familiar?

"You have to give these so-called 'fringe' healers credit," ventures Dr. Der Marderosian. "I see alternative medicine coming into its own in the next generation."

Whether it does or not, herbalism will continue to be treasured by those of us who savor romantic folklore and delight in learning of its serviceability. Herbal lore, it's safe to say, will live on well beyond the next generation.

Sources:

Boericke & Tafel
1011 Arch Street
Philadelphia, PA 19107
922-2967

Dr. Ara Der Marderosian
Professor of Pharmacognosy
Philadelphia College of Pharmacy & Science
Collection (raw botanicals, early patent medicines, historic implements, herbaria)
Open by appt. Call him at 596-8915

Dr. J. H. Feingold, Naturopath (N.D.)
332 S. 21st Street
Philadelphia, PA 19103
546-1173

Dr. Deva Kaur Khalsa, V.M.D.
Homeopathic Veterinarian
Edgewood Village Veterinary Clinic
1724 Yardley-Langhorne Rd.
Yardley, PA 19067
493-0621

The Lawrence Review of Natural Substances
P.O. Box 186
Collegeville, PA 19426
\$18/yr. for monthly newsletter
Penn Herb Co., Ltd.
603 N. Second Street
Philadelphia, PA 19123
925-3336

Ann Jarmusch is a free-lance writer and editor who is a frequent contributor to *Green Scene*. She contributed two articles to the recent *Philadelphia Inquirer Garden Guide*. She is a recipient of the Pennsylvania Council of the Arts Writing Fellowship.

Design on Herbs



by **Ed Lindemann**

Usually when we think of herb garden designs we picture geometric beds bordered with miniature boxwood and filled with delightfully tasty and fragrant plants. The herb garden has traditionally been an extension of the kitchen garden, usually placed near the back door. This concept is functional and should be continued, but perhaps it should also be expanded adding herb plants as a special element in garden design. From the very casual to the elegantly formal, herbs have a special place in every garden.

Here is a group of gardens where the gardeners have carefully incorporated herbs as a major design element into their overall composition. Whether the use is subtle or striking, the break from tradition is a welcome addition to the design.



photo by Ed Lindemann

With the help of a professional designer, PHS members Sally and Alan Bleznak turned this problem corner spot in their Main Line garden into a focal point enjoyed from both inside and out. The area, only 12 ft. by 12 ft., was originally dead space framed by a wall of the house and cellar entranceway and viewed from the breakfast room.

Architectural elements in the design include flagstone paving

that picks up the color of the house and provides easy maintenance, access, a sundial for charm as well as time telling and a lattice screen that hides the cellar hatchway and provides support for clematis. An assortment of herbs mostly for cooking and an espaliered pear complete the composition. The area has now become an extension of the kitchen and breakfast rooms and leads the eye to the main garden beyond.



Busy schedules limit the gardening time of husband and wife team Elisabeth Woodburn and Keith Robertson at their rural New Jersey home. Herbs play an important part in the overall design and require minimum maintenance. A grouping of thyme is encouraged to spill across the paving stones on a large terrace. The changing color and textural effect provides visual interest. When disturbed either by foot or a caressing hand the fragrance is an added treat. The same plants are repeated in groups around the terrace providing a visual rhythm as the eye is carried across and around the paved area.



One of Pennsylvania Horticultural Society's most enthusiastic and talented urban gardeners, Ruth Flounders has created a secluded herb garden that is a horticultural delight. The design is casual in appearance, but carefully composed. While only a short distance from the sounds and smells of rushing traffic, the garden visitor is engulfed in a blend of fragrance, color, texture and taste fit to dazzle any plant lover.

continued

Upon entering the garden, I almost felt I was at the beach. The mounds of mint, thyme and lavender appear to cascade and tumble upon each other with the color and turbulence of the surf breaking on a sandy shore. Just as the breaking surf tends to be hypnotic, this herb garden pulls its visitors in deeper and deeper until they are oblivious to the world around them.



Another section of the Robertson/Woodburn garden incorporates a raised planting bed. Backlighting by the morning sun, garlic chives resemble an exploding firecracker. A mixture of herbs and annuals is combined to continue the country casual atmosphere in this garden. A planting pocket in the terrace paving allows plants to spill from the raised bed giving an especially interesting use of texture in the overall design.



The herb garden at Meadowbrook Farm, designed by master horticulturist J. Liddon Pennock, Jr., looks good all year long. Architectural features including urns, a sundial and iron furniture are staged in an area of geometric designs. Tender herbs and annual vegetables fill the planting areas in spring to provide a useful summer kitchen garden. As fall approaches and the last of the harvest is made the spent plants are removed. The beds and paths are raked to provide aesthetically pleasing patterns. And while void of the lush greens, greys, blues and purples of the growing season, the earthy amber, brown and rust tones of soil, mulch and stone permit the garden to resume a respectable winter appearance.

continued

Design continued



The "ultimate mint julep" sits in a corner of my herb garden. A sunken half wine barrel with darting goldfish reflects the guard-like frog fountain. Surrounded by a variety of mints, the splashing water and minty fragrance are soothing on hot summer days. A stone path skirts the mint bed, deliberately allowing the plants to be disturbed by passers-by thus releasing their pungent, refreshing perfume.



Located in the Fairmount Park Horticulture Center Display gardens this raised planting bed is a completely self-contained garden approximately 3 ft. x 5 ft. The growing conditions of full sun and excellent drainage allow the plants to flourish. Taller plants such as chives and tarragon are arranged in the center of the composition with lower growing thymes and parsley around the outside. The height of the garden, approximately 2 ft., makes it easy to maintain and harvest.



The herb garden at the Pennsylvania Horticultural Society headquarters is a patchwork of color and texture. Designed by head volunteer gardener Ann McPhail, the planting is a blend of permanent hardy herbs and more tender varieties that are wintered over in a greenhouse. Three different color tones give the garden strong visual impact. The dark, almost black green of boxwood, bay and purple basil contrast with the silver grays of lamb's ear and lavender. The pale yellow of lady's mantle and golden oregano accent all of the plants creating a swirl of contrasting colors.



A front yard garden in West Philadelphia sports an herb farm. Where most of his neighbors have a small plot of lawn or even concrete, Frank Kieser has chosen to raise herbs. Taking advantage of the proper growing conditions, light and drainage, Kieser has arranged his design in steps with low creeping thyme cascading over the wall near the street and tall scented geraniums against the house foundation. The plants provide material for cooking and crafts as well as visual enjoyment.

PHS horticulturist Ed Lindemann designs the Philadelphia Flower Show and is a frequent contributor to *Green Scene*.

Herbs: Books and Plant Sources

PHS librarian Mary Lou Wolfe recommends:

Listed here are additions since 1978 to the PHS Library's collection of books about herbs.

You can have an annotated list of herb books that were in the PHS Library before 1978 if you send a self-addressed, stamped envelope to: Library-Herbs, PHS, 325 Walnut Street, Philadelphia, PA 19106.

Caprilands Kitchen Book: economy cooking with herbs. Adelma Grenier Simmons. Caprilands Farm, 1982.

The Complete Book of Herbs and Herb Growing. Roy Genders. Sterling, New York, 1980.

The Complete Book of Herbs and Spices. Claire Loewenfeld and Philippa Back. David and Charles Newton Abbot, London, England, 1978.

Cooking with Herbs. Susan Belsinger and Carolyn Dille. Van Nostrand Reinhold, New York, 1984.

The Cultivated Basils. Helen H. Darrah. T. E. Thomas, Independence, MO 1980.

Health, Happiness and the Pursuit of Herbs. Adele Godchaux Dawson. Stephen Greene Press, Brattleboro, VT, 1980.

The Herb Book. Arabella Boxer and Philippa Back. Octopus Mayflower, 1980.

The Herb Garden: a complete guide to growing scented, culinary and medicinal herbs. Penguin Books, New York, 1984.

Herb Garden Design. Faith H. Swanson and Virginia B. Rady. U. Press of New England, Hanover, NH 1984.

Herb Gardening at its Best: everything you need to know about growing your favorite herbs. Sal Gilbertie. Atheneum/SMI, New York, 1978.

Herbs: An Indexed Bibliography, 1971-80. James E. Simon. Archon Books, Hamden, CT, 1984.

Herbs and Herb Gardens of Britain. Elizabeth Peplow Webb & Bower. Published in association with the Herb Society, Exeter, England, 1984.

Herbs and Spices. American Horticultural Society, Mt. Vernon, VA, 1982. (Illustrated Encyclopedia of gardening series).

Herbs and Spices of the World. Hermie Kranzendorf. Schiffer, Exton, PA, 1983.

Herbs: how to select, grow and enjoy. Norma Jean Lathrop. H. P. Books, Tucson, AZ, 1981.

Oriental Herbs and Vegetables Handbook 101. Brooklyn Botanic Garden, Brooklyn, NY, 1983.

Park's Success with Herbs. Gertrude B. Foster and Rosemary F. Loudon. Park Seed, Greenwood, SC, 1980.

The World of Herbs and Spices. Ortho Books, Chevron Chemical, San Francisco, 1978.

Herb Periodicals that may be used in the PHS Library:

The Business of Herbs (bi-monthly)

The Herb Grower (Quarterly)

Herb Grower Magazine (Quarterly)

Herb Quarterly (Quarterly)

Herbarist (Annual)

Nursery and seed sources for herbs:

Apple Pie Farm (Judy Street)
Union Hill Road
R.D. 1
Malvern, PA 19355
(215) 933-4215

Caprilands Herb Farm
Silver Street
Coventry, CT 06238
(203) 742-7244

Carroll Gardens
P.O. Box 310
44 E. Main Street
Westminster, MD 21157

Casa Yerba
Star Rt. 2, Box 21
Days Creek, OR 97429
(503) 825-3534

Comstock Ferre & Co.
Box 125
Wethersfield, CT 06109
(203) 528-3319

Hemlock Hill Herb Farm
Hemlock Hill Road
Litchfield, CT 06759
(203) 567-5031

Herbs 'n Honey Nursery
16085 Airline Road
P.O. Box 124
Monmouth, OR 97361
(503) 623-4033

Logee's Greenhouses
55 North Street
Danielson, CT 06239
(203) 774-8038
catalog \$3.00

Meadowbrook Herb Garden
Wyoming, RI 02898
(seeds)

Merry Gardens
P.O. Box 595
Camden, ME 04843

Mincemoyer Nursery
County Line Road (Rt. 526)
Jackson, NJ 08527
(201) 363-3215

The Redwood City Seed Co.
P.O. Box 361
Redwood City, CA 94064

Rosemary House
120 So. Market Street
Mechanicsburg, PA 17055
(717) 697-5111

Waterloo Gardens
Devon Blvd. & Lancaster Pike
Devon, PA 19333
(215) 293-0800

Well Sweep Herb Farm
Mt. Bethel Road
Port Murray, NJ 07865



If you like this issue of GREEN SCENE, there's more to come.

GIVE A GIFT SUBSCRIPTION TO YOUR FAMILY AND FRIENDS.

A BARGAIN AT \$8.50.

SEND SUBSCRIPTION TO:

FROM:

_____	_____
_____	_____
_____	_____

Return check and coupon to Green Scene, PHS, 325 Walnut Street, Phila., PA 19106

HERBALS: *of Virtues and Violets*

 by Julie Morris

All passionate gardeners know their involvement with plants goes beyond the creation of a lovely garden, the cultivation of a rare plant or the knowledge that there will be another spring. For centuries plants were thought to cure more than physical ills and their virtues multiplied according to the esteem with which they were regarded.

How cheering it is to read in Gerard's *Herball* about the beloved rosemary. Beyond its uses as a remedy for the loss of appetite, gout and coughs, it was thought that a garland of rosemary worn on the head comforted the brain and the heart, restored memory and made spirits merry. We are often in need of merry spirits these days and a look into the collection of herbals belonging to the Pennsylvania Horticultural Society, on deposit at the American Philosophical Society, will confirm our beliefs that plants and gardening, while good for the body, are vital for the spirit.

Herbals are books that go beyond listing plants of a certain area; unlike floras, they include names and descriptions of plants as well as their properties and virtues.

Controversy and confusion surrounded much of the work of the herbalists. Prejudices, plagiarism, and tall tales abounded. Two books help untangle the history of herbals in very readable fashion. Agnes Arber's *Herbals*, first published in 1912 and presented in a revised edition in 1938, traces the development of the printed herbal in Europe between 1470 and 1670. Arber deals with the botanical and artistic points of view and not the medical. She studied the herbals themselves and thanks to her research, we have a clear picture of the development of botany from two distinct points of view: the philosophical and the utilitarian.

The Old English Herbals by Eleanor Sinclair Rohde, published in 1922, follows the history of Anglo Saxon herbals from the 8th century through the 17th and includes bibliographies of herbals dating well into the 19th century. Rohde covers all aspects of the herbals and gives extensive examples of the medical properties and other virtues of plants. Both Arber and Rohde relate the development of herbals chronologically and show how each herbalist was influenced by earlier writers, and who borrowed what from whom and just how mis-

information and many legends were passed on.

Perhaps the most famous plant story passed from century to century, accepted as truth by some herbalists and dismissed by others, was the Barnacle Goose Tree legend. It appears as early as the 12th century and as late as the 18th. Eleanor Rohde repeats a simple version of the story: "According to one version, certain trees growing near the sea produced fruit like apples, each containing the embryo of a goose, which when the fruit was ripe, fell

Beyond its uses as a remedy for the loss of appetite, gout and coughs, it was thought that a garland of rosemary worn on the head comforted the brain and the heart, restored memory and made spirits merry.

into the water and flew away. It is more commonly met with the form that the geese emanated from a fungus growing on a rotting timber floating at sea. This is Gerard's version." The acceptance of this legend was but one reason his contemporaries and critics doubted his credibility.

The revised edition of the *Herball* published after his death excluded the goose tree legend. John Gerard's work, published in 1597, made him the best known of the English herbalists. *The Herball*, monumental for its time, contained 1800 illustrations. Although most were taken from woodblocks appearing in other works, 16 plants were illustrated for the first time, including the potato that Gerard incorrectly labeled as being native to Virginia.

Gerard's work was largely adopted from a translation of the writing of Rembert Dodoens, the eminent Belgian botanist. Mistakes abound in the *Herball* but it does include Gerard's thoughts and observations concerning the folklore of the day. His optimism, a common characteristic among gardeners, no doubt contributed to

his popularity. Gerard retains many of the old English names for flowers so we can read of devil's-bit, sawwort and whortleberries along with live-forsythes and go-to-bed-at noons. We learn that smelling basil is good for the heart and bugloss will drive away sorrow.

Botany and medicine came down through the ages together from the time the Greek Dioscorides was describing the medicinal values of 500 plants in the first century A.D. until the end of the seventeenth century when they became two distinct sciences. John Parkinson was the last great herbalist. Nicholas Culpeper, who followed Parkinson, was popular but criticized for his astrological approach to plants and their relationship to diseases. Parkinson published *Theatrum Botanicum*, the largest herbal in the English language in 1640.

Parkinson intended that his *Theatrum Botanicum* include all known medicinal plants and described nearly 3,800, twice the number in later editions of Gerard and many times the 100 to 500 plants found in the earliest manuscripts before books were printed. Parkinson set up his own "classes or tribes" of plants that have no botanical standing today. He divided plants by description, use, effect or habitat. Thus there are, among others, "classes" of sweet smelling plants, purging plants.

continued

Samphire: "It is well known almost to every body, that ill digestions and obstructions are the cause of most of the diseases which the frail nature of man is subject to; both which might be remedied by a more frequent use of this herb. If people would have sauce to their meat, they may take some for profit as well as pleasure. It is a safe herb, very pleasant both to taste and stomach, helps digestion, and in some sort opening obstructions of the liver and spleen; provokes urine and helps thereby to wash away the gravel and stone engendered in the kidneys and bladder." ►

From: Culpeper's *English Physician and Complete Herbal*, printed in 1789 by Green & Co., London. Page 164.



Samphire.



Sun Dew.



Short leaved Tobacco.



Small Tobacco.



White Saxifrage.



Scabious.



English Spikenard.



Meadow Saxifrage.



Third Scabious.



Soap Wort.



Speedwell.



Sheep Scabious.

HERBALS: continued

wound plants, biting plants, capillary herbs, pulses, grasses, marsh and sea plants, the unordered tribe (anything not already classified), trees and strange and outlandish plants.

This taxonomist's nightmare nevertheless made sense to Parkinson. He accepted the notion of amulets to ward off certain pains and diseases. He unquestionably followed the old belief that certain herbs promoted happiness, helped weak brains and were good against "the passions and tremblings of the heart." He gave many recipes for beauty aids, hair dyes and wrinkle removers.

Parkinson included virtues of plants beyond their effect on humans. For example, agrimony leaves cured cattle suffering from coughs, and a mixture whose main ingredient was hemp would draw earthworms out of their holes for eager fishermen. Burning willow herb drove away flies and gnats from marsh areas and it was thought that purslane kept lightning from striking.

Nicholas Culpeper perhaps was more infamous than famous. He cantankerously warns readers of the many counterfeit editions of his *English Physician Enlarged*, which appeared in five editions before 1698. There are even two early 19th century editions of this work, which relied heavily on the influence of the planets on plants and how they should be used to cure what ails. Eleanor Rohde wrote quite strongly about Culpeper, asserting that he must have known what nonsense he was writing but that because he was such a financial success he kept on promoting his planet theories. Indeed Culpeper appeared everywhere in original and bogus editions and appears to have been very popular with the public.

The Art of Simpling by William Coles, published in 1656, derides Culpeper, yet Coles believed in the unorthodox "Doctrine of Signatures." The doctrine held that the shapes of plants in relation to different parts of the human body determined their use. Thus plants with heart-shaped leaves were thought to ease afflictions of the heart, herbs with yellow sap cured jaundice, etc. Coles's theories may seem preposterous to us but his book has some charming statements.

Eleanor Rohde was so taken with his chapter on the "Joys of Gardening" that she quotes him extensively. "A house, though otherwise beautifull [*sic*] if it hath no garden is more like a prison than a house." The following is perhaps Rohde's best chosen quote for today's speeded up way of life. "...If a man be wearied with over

much study there is no better place in the world to recreate himself than a Garden...."

The PHS collection of herbals is far more extensive than the few English herbals I have mentioned here. There were European writers such as Leonhard Fuchs whose 16th century herbals were so beautifully illustrated that illustrations for most of the best known herbals of the time were printed from the actual woodblocks or copied from Fuchs works. I haven't mentioned William Turner's *Herbal*. Turner is considered the progenitor of English botany, and he was the first to study plants scientifically. Turner's work, published in two parts, the first in 1551 and the second in 1561, was the first original work by an Englishman. The lovely woodcuts were reproduced from the Fuchs herbal. Turner's accurate observations of plants include as well descriptions of their native habitat.

The *Grete Herball*, printed by Peter Treveris in 1526, is a translation from a French work. The *Grete Herball* was written before the natural order of plants was known and so plants are listed alphabetically. A succinct discussion of mushrooms states that if eaten they will either kill you or not kill you!

RECIPES ADAPTED FROM THEATRUM BOTANICUM

17th Century Hair Conditioner. Golden flowers of mullein boiled in lye dyes the hairs of the head yellow and makes them fair and smooth.

To Make Hair Grow. The ashes of south-ernwood mixed with old salad oil will cause a beard to grow or hair on a bald head, and yarrow is almost as good.

To Treat Melancholy. Of borage: the leaves, flowers and seeds are very cordial and help to expel pensiveness and melancholy that comes without cause.

A confection made from oak galls is used with good effect against melancholy, passions and sorrow.

To Aid Digestion. Samphire: It is well known almost to every body, that ill digestions and obstructions are the cause of most of the diseases which the frail nature of man is subject to, both which might be remedied by a more frequent use of this herb. If people would have sauce to their meat, they may take some for profit as well as pleasure. It is a safe herb, very pleasant both to taste and stomach, helps digestion, and in some sort opening obstructions of the liver and spleen; provokes urine and helps thereby to wash away the gravel and stone engendered in the kidneys or bladder.

The more charming *Banckes Herbal* is another English herbal whose author was anonymous and the work was a compilation of various writings. In *Banckes Herbal* we again read of the virtues of rosemary with a final thought that one should "make thee a box of the wood of rosemary and

smell to it and it shall preserve thy youth."

The charming Elizabethan English in Gerard's description of violets is considered one of the loveliest in any work of any time. He lauds the violet whose beauty and uses appear endless: syrup distilled from the flower was used to treat pleurisy and coughs, the flowers also reduced inflammation, and dried violets were thought to strengthen the heart. Gerard ends the piece with the following "...for flowers through their beauty, variety of color and exquisite form do bring to all liberal minds ... the remembrance of honesty, comeliness and all kinds of virtues."

The herbalists of several centuries ago shared an unquestioning acceptance of the efficacy of plants in treating the ills of the body and spirit. We may not turn to the garden today and look for cures for our physical complaints to any great extent but more and more we look to the garden to restore our senses and "make our spirits merry."

Sources:

Early Herbals

The early herbals discussed in this article are part of the Pennsylvania Horticultural Society collection on deposit at the American Philosophical Society, one block away from PHS. Appointments to see any of these herbals can be made through PHS horticultural librarian Mary Lou Wolfe, 625-8268.

The Art of Simpling, William Coles. Printed by J Streater for Nathaniel Brooke, London, 1657.

Culpeper's English Physician and Complete Herbal, Nicholas Culpeper. Green & Co., London, 1789.

The Grete Herball, Peter Treveris. Southwark, London, 1529.

An Herbal, Richard Banckes, 1525. Prepared and edited by Scholars facsimile and reprinted New York Botanical Garden. Reproduced from copy in the British Museum.

Herbal, Leonhard Fuchs. Basel, 1542.

The Herball or Generall Historie of Plants Gathered by John Gerarde of London, Master in Chirurgerie. Imprinted at London by John Norton, 1597.

Theatrum Botanicum, John Parkinson. Thos. Cotes, London, 1640.

Books about Herbals

Herbals, Their Origin and Evolution: A Chapter in the History of Botany 1470-1670, Agnes Arber. University Press, Cambridge, 1912.

The Old English Herbals, Eleanor Sinclair Rohde. Minerva Press, London, 1972.

Julie Morris is the horticulturist at Blithewold Gardens and Arboretum in Bristol, Rhode Island. She is the former PHS horticultural librarian and continues to exhibit in the Philadelphia Flower Show every year. She won a "Best of Day" award in the horticultural classes in the 1985 Show.

Herb Crafts: FOR USE OR FOR DELIGHT

 by Bertha Reppert



Fagots, the last fragrant harvest, to start a fire. In the front, "simmering potpourri" another aromatic addition to the house.

Everyone with a herb garden has a harvest, and since clipping is essential to the health of a herb garden, even a small, young plot will yield a remarkable amount of material for crafts. Herbs, once among plants of our greatest dependency, can be enjoyed today for pure pleasure. Here are a few of my favorite ways to use and enjoy colorful fragrant herbs.

potpourri

Easiest to accomplish as well as the most useful, sweet smelling potpourri is basis for many other crafts. For maximum color, dry all your herbs and petals out of the sun, in a warm airy place. They can be hung, of course, but we use screens elevated on bricks; however, hanging wire baskets work well too. Toss in every flower available from the garden or florist bouquets.* Some to dry for best color are yellow crocus, scarlet tulips, pink peonies, roses of all colors except white, golden sunflowers and marigolds, blue delphiniums and red poinsettia bracts.

Along the way, add every snippet gar-

nered from your herb garden — gray sage, purple lavender, green thymes and mints, chartreuse santolina, red perilla. Any of the aromatic herbs will enhance your potpourri. When your collection is "chip dry" (texture dry to touch or sounds like crunchy potato chips), you are ready to create.

BASIC GARDEN POTPOURRI

- 4 cups colorful petals
- 4 cups fragrant herbs
- 1/2 cup orris root** coarse grind (a fixative)
- 1/2 dram rose oil** (or fragrance of your choice)

Mix orris and oil thoroughly, then add to dry herbs and petals. Store in a large tightly lidded container for four to six weeks, stirring occasionally until all fragrances marry into a satisfying blend. When aged, pack in attractive glass jars. Remove the lid and stir to release the aroma into a room. You

*To "Potpourri or Sachet," Emmeline Beal McIlvain, *Green Scene*, May 1984.

**Available from any herb and spice shop or through the mail.

will have created a natural air refresher.

The same potpourri is used to make several other crafts including sachets.

SACHET FAVORS

Using 6-in. squares of organdy, net or calico, place a tablespoon of potpourri in the center of each square. Draw up the four corners and secure around the top with a complimentary ribbon. Perfect party favors, they are pretty as a centerpiece too when piled high in a basket. Tuck one in a small drawer to perfume either lingerie or notepaper.

CLOSET SACHETS

The same sachet ball made larger and with a ribbon loop added can be hung in a closet. Remember that more space and air requires more potpourri to be effective. If it seems to lose its fragrance, a dab of essential oil will refresh the sachet bag for another season.

MOTH CHASERS

To the same basic potpourri mixture, add a cup each: cedar chips, dried lavender,

continued

mint, santolina or wormwood, southernwood or rue, and patchouli.** Combine and age together for a few days before making flat pillows to lay between woolens. If stitching cloth envelopes doesn't appeal to you, enclose in pretty hankies, cross tying all four corners to secure. Quick, easy, attractive, the anti-moth mixture will be effective for a year or so when it can be renewed with more dried herbs from your collection. Friends will love these little gifts from your garden as a welcome change from mothballs.

SACHET CARDS

Old greeting cards are easily recycled to fresh new purpose using the same basic potpourri. Vary the aroma by selecting a different perfume oil. Stuff cards with a bit of potpourri and close the three open edges with an attractive blanket stitch of wool yarn. Or use a sewing machine zig-zag stitch if you prefer. On the blank back of the card, inscribe your message. These are especially nice bon voyage cards, a flat fragrant suitcase sachet.

SIMMERING HERBS

Again the same basic herb garden potpourri is pressed into service. Strengthen the bouquet by adding the entire dram of oil and blend well. A small scoopful simmered in a pan of water will spread fragrances throughout the house, a delightful way to conceal kitchen odors or to welcome guests.

KITCHEN SPICE ROPES

The closer these popular wall decorations are hung to the steam from cooking the more effective they are, gently releasing their spicy fragrance into the air. Add whole allspice and cloves from your pantry to the basic potpourri and make three small sachets for a 15-in. hanging. Using 2 in. wide sturdy burlap ribbon or braided twine, sew on the small sachets alternated with three 3-in. cinnamon sticks. To hang you will need a brass ring at the top.

WEDDING WISHES

Instead of traditional rice, tossing bridal potpourri is elegant, fragrant, symbolic and quickly biodegradable. Combine the same basic herb garden potpourri with an equal quantity of bird seed and make individual sachets for the wedding guests. Young children enjoy distributing them to the waiting guests from baskets. About a teaspoonful of the colorful petals and bird seed (substituted for rice) will shower the couple with good wishes for a long life and a happy one.



Various sweet bags, some attached to rope or burlap for the kitchen.



Busterfer Jones nibbles a bunch of catnip while her toy mouse awaits. She has already tackled the catnip wreath.



Snooze pillows come in assorted shapes and sizes.

SLEEP PILLOWS

Said to be George III's favorite relief from insomnia, this pillow is a perfect gift for a hospital patient. Cut two 8 in. x 12 in. rectangles of cotton fabric. Sprinkle two cups of dried hops blossoms** with a few drops of alcohol (rubbing, brandy, etc.) to release the lupulin, the soporific in the hops. Sew the hops inside the pillow, which can be as plain or as fancy as you like. The little cushion is pinned to the bed pillow or to the back of a favorite chair. Smelling the hops will make one drowsy. In Pennsylvania Dutch country, this is a simple home remedy for headaches, earaches, toothaches and so on. A clean white sock is stuffed with the hops, heated and used as a pillow. The patient soon dozes off, comforted by the "hop-a-sock."

BOOKMARKS

Costmary, also called "bibleleaf," bears long strap-like leaves that smell exactly like Wrigley's spearmint chewing gum. Chew one and see for yourself. My grandmother pressed them in her prayerbook to sniff during lengthy sermons. They not only serve as fragrant bookmarks, they also deter silverfish and paper chewing insects. To press the leaves, place them carefully between tissues in the pages of old telephone directories weighted down with heavy books for two weeks. To make more durable bookmarks, cut 2 in. x 6 in. pieces of colorful art paper and glue on the pressed leaves. A dab of any white craft glue will do. Dress the long strip with streamers of velvet ribbon and handwrite "Costmary, a Bibleleaf Bookmark" to make its purpose clear. Cover with clear contact paper and pink the edges for a finishing touch. You will find these items popular at church bazaars.

SUNDAY BUNCHES

In olden times when personal care was sometimes difficult and sweet smelling crowds non-existent, people carried little nosegays of fragrant herbs and flowers "to sniff unto." Collect short snippets (lemon balm, lavender, mint, southernwood, etc.) from your herb garden, condition them well in warm water for several hours, then tie little bunches with colorful ribbons and foil around the stems. Refrigerate until using. These are fun to carry by the basketful, distributing them along your way not only at church on Sunday. It will make everyone's day.

ANTI-WITCHCRAFT BUNCH

Centuries ago, herbs were considered powerful tools against witches and their deviltry. We scoff at all this today, of course, but just in case, here's a decorative bunch that could also be considered protective. Shakespeare wrote

*Trefoil, Johnswort, Vervain, Dill
Hinder witches of their will.*

Many clovers, spiked vervain and golden St.-Johns-wort are easily gathered along roadsides in summer. Combined with fragrant stalks of dill from the herb garden, this is a handsome hanging, decorative and colorful if you tie it with orange ribbons. Other pretty herbs reputed to hold similar powers are *Rue* 'Blue Beauty,' gray green juniper, brilliant orange mountain ash berries and stalks of black elderberries gathered well before they are ripe enough to drop.

HERBAL FLEA POWDER

2 oz. powdered dried pennyroyal
2 oz. powdered dried winter savory
1 oz. powdered dried wormwood
1 oz. powdered dried rosemary

1 t. cayenne pepper

All these herbs can be grown in your garden, harvested and dried. Powder them in your food machine. Mix herbs and store in a tightly lidded container. Use on your pet as necessary but be careful to keep it away from the pet's eyes.

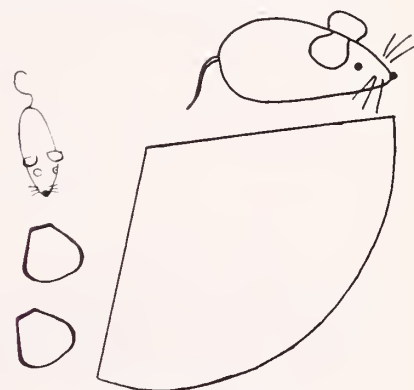
FIDO'S FLEA REPELLENT BED PILLOW

2 cups pennyroyal
1 cup catnip
1 cup camomile
1 cup thyme
1 cup wormwood

Mix the dried herbs together, as whole as possible. If you have black alder (*Ilex verticillata*) leaves or know where to gather this native deciduous holly, add two cups of these leaves also. Stuff a flat square pillow for your pet. An old pillow works well; simply open up one end and add the whole herbs to the existing stuffing. A colorful outer fabric, removable for washing, is handy.

CATNIP MICE

Catnip mice are nice when made from fresh-from-the-garden dried catnip. Here is an easy pattern. Cut the body from felt. Sew straight sides together and turn seam to inside. Stuff with catnip. Cut a 2-in. long tail from white yarn and drawing rounded edges together insert tail and secure. Cut ears out of white felt and glue in place. White whiskers, eyes and nose can be added with heavy thread. Kitty and all her friends will be pleased no matter how limited the talents of the seamstress.



HERB WREATHS

Gather all the long stems of 'Silver King' artemisia, wormwood, southernwood, mint, lemon balm, tansy, or whatever your garden has to offer. Using a wire wreath frame covered with ribbon, tie the long strands to the wreath form with strong carpet thread, going around and around the frame until it is fully covered with herbs. Once you have a fragrant base of herbs from the garden, it is an easy matter to poke in any pretty herb flowers or seed heads that you may have on hand. As the garden produces, harvest its choicest materials — colorful monarda,

continued

garlic chive umbels, tansy buttons, hyssop spikes, yarrow, white feverfew, lavender, mint flowers, rose hips, and everything else. Simply poke them into the network of herb stems and thread that you initially established. They will hold in place easily.

Your wreath will vary with the season and your garden's productivity. Don't overlook the herbs of the field, of course. Golden-rod, teasel, boneset, Joe-pye-weed, butterflyweed, soapwort and Queen-Ann's-lace are all possibilities.

The most important piece of advice I can give about making wreaths by this method is to work with *fresh material*. That's the secret. You can devise your own method of applying it to the wreath form, but it is almost impossible to work with many of these herbs when they are dry. The shattered remnants of such an attempt can be added to your potpourri.

You can also ornament your herb wreath

by placing small dried herbs in mesh, glue aromatic herb seed in acorn cups, use all kinds of spices and exotic herbs, whole cinnamon sticks, nutmegs and little kumquat pomanders. Wire some onto stems and simply glue others into place. Finish it with a bow, if you like, and hang proudly. Every herb wreath will be different but all may be beautiful. They can be as large as you like.

TINY WREATHS

Use Mason jar rings and glue bits of herbs, dried flowers, evergreens, little Christmas balls, tiny birds, spices of all kinds (fragrant and colorful), birdseed, dried corn, and empty half shells of nuts, especially pistachio. This is a good workshop project with everyone contributing small decorations and combining accumulations. A community tree can be decorated thus very quickly at small cost.

HERB FAGOTS

After you have finished drying your herbs and used all the leaves in such old-time crafts as these, you will have lovely long bare stems of mint, lavender, savory, sage, lemon balm or lemon verbena. These stems are redolent with essential oils. Tie them in bunches using wool or natural twine. Pile them in a fireside basket where they are handy to start a cheery fire. They are a fragrant natural incense when burned. If you give these bunches as gifts, be sure to include a clever tag with a word of explanation. They may not look exciting, but, oh, the delightful purpose.

Bertha Reppert is an herb expert who has written two books: *A Heritage of Herbs*, Stackpole Press, Harrisburg, 1976 and *Herbs Today*. She is the proprietor of Rosemary House, a shop dedicated to the world of herbs and spices. Reppert says that when she doesn't have her hands in the garden, she has them in crafts.

Letters to the Editor

Dear Betty Derbyshire:

I read with pleasure your article in *The Green Scene* (May, '85, p. 26) about four of my favorite perennials for shade.

However, I think you will find that the plant that you undoubtedly acquired as *Epimedium pinnatum* is *E. x versicolor* 'Sulphureum'. This fine plant has been distributed in this area under the wrong name.

In my garden there are more than a dozen epimediums, a few still quite small and blooming for the first time. Many have been here for years and are in large masses. I have never had *E. pinnatum*, but have its variety *colchicum*, and apparently they are not very different. But the difference between *E. p. colchicum* and 'Sulphureum' is very marked indeed.

If you will consult an article in *Arnoldia*, Vol. 39, 1979, pp. 51-66, you will find a very interesting lot of information. It has already helped me here and will more when the new epimediums get a little bigger.

I wish you lived a little nearer Swarthmore. I would say come quick and see the epimediums. I enclose a few flowers of *E. p. colchicum*, which show the short red-brown spurs (petals) and the larger inner sepals, also a leaflet, showing that the foliage is almost evergreen. *E. x v. 'Sulphureum'* gives an entirely different effect in the garden, its color softer and paler.

Gertrude Wister
Swarthmore, PA

Editor's Note: Charles O. Cresson of Swarthmore also called this correction to our attention

the plant finder

— A free service for *Green Scene* readers



If you can't locate a much wanted plant send your name and address (include zip), the botanical and common name of the plant to Plant Finder, *Green Scene*, PHS, 325 Walnut St., Philadelphia, PA 19106. People who have the plants or seeds you want will contact you to make arrangements about selling or giving them away, mailing, etc.

WANTED

Exochorda grandiflora, preferably 3 ft. to 5 ft. in height.

Contact: Genevieve E. du Pont, P.O. Box 3704, Greenville, Delaware 19807

Madame Gregoire Staechelan, an old-fashioned rose bush.

Contact: Carol Gangewere, 676 W. Johnson St., Philadelphia, PA 19144. Phone: 438-2399 (after 6 pm).

ROSE VALLEY NURSERIES

Recipient of the 1983 Philadelphia Flower Show, Inc., Silver Trophy. Visit our garden center and landscape design office for seeds, plants, and plans. Staffed by professional horticulturists. 684 S. New Middletown Rd., Media, PA 19063. (215) 872-7206.

ENGLISH BOXWOOD FOR SALE

Specimen 3 ft. - 6 ft. high and wide. Bucks County 215-598-3844.

Complete Lawn and Gardening Maintenance

(Grass Cutting)

Shrubs Fed and Trimmed

John J. Galante

104 Atwood Road

Erdenheim, PA 19118

836-5622 • 836-5739

LAUREL HILL GARDENS

8125 GERMANTOWN AVE.

CHESTNUT HILL, PA

247-9490

- Over 350 varieties of select herbaceous perennials, wildflowers, and ferns.
- Flowering, unusual, and rare trees as well as tried and true varieties.
- Large selection of dried flowers and arranging supplies.
- Distinctive terra cotta pottery.
- Landscape design and installation services.
- Garden club representatives are invited to contact us concerning group orders and discounts.

LAUREL HILL GARDENS

IT ISN'T EASY BEING GREEN unless you have a QED residential Lord and Burnham greenhouse added to your digs. We design, erect, and equip to satisfy your rules of green thumb. Grow anything green year-round (except perhaps frogs). **QED, INC.**—offering expected amenities to the Philadelphia Main Line and Chestnut Hill. 688-1514. P.O. Box 161, Villanova, PA 19085.

Sunrooms - Greenhouses
Redwood Window Greenhouses
Full Size Samples on Display
Aluminum, Redwood, Swedish Fir
Custom Design and Installation

SunSpaces Inc.

Main & Walnut Sts.

North Wales, PA 19454

215-699-3747

Our Color Illustrated 1985 Fall Catalog

"BEAUTY FROM BULBS"

is available at no charge. It has been a classic in the world of bulbs for over 75 years. In it we offer an unequalled list of Daffodils, Tulips, Lilies and many other bulbs for Spring and Summer flowering. Our catalog is simply stated, very informative and will be a great help in planning your bulb garden.

Send for a copy today.

JOHN SCHEEPERS, INC.

Flower Bulb Specialists

63-65 Wall Street

New York, NY 10005

(212) 422-1177

DILATUSH NURSERY

Dwarf and unusual woody plants. By appointment only. 609-585-5387. 780 Rte. 130, Robbinsville, NJ 08691 (just south of Interstate 195)

Specializing in the Unusual ... Dwarf rhododendrons, deciduous and evergreen azaleas, dwarf evergreens, companion plants. Catalog \$1.00, refundable. The **Cummins Garden**, 22 Robertsville Road, Marlboro, NJ 07746. Phone: 201-536-2591

ARBORICULTURE SERVICES

Custom Pruning and Complete Care of Trees and Shrubs to Promote Healthy Attractive Plants

McFARLAND LANDSCAPE SERVICES

Phila. - 438-3970

East Mont. Co. - 646-7222

Main Line - 688-6644

Landscape Services

DAVID BROTHERS LANDSCAPE NURSERY

For Fine

- Design/Built Gardens
- Consultation

• Landscape Restoration

QUALITY SERVICE WITH
COURTESY & RELIABILITY

247-2992 584-1550

PLANTED TOPIARY SCULPTURES. Many designs. Shipped anywhere. Free catalog. Credit cards & phone orders. 215-925-4125. **EXOTIC BLOSSOMS**, 510 South 5th Street, Philadelphia, PA 19147.

FOR SALE

Sergeant Weeping Hemlock 4 ft. - 6 ft. \$200

Himalayan Pine 6 ft. - 7 ft. \$40

Umbrella Pine 8 ft. \$350

Buyer must remove from ground at own expense.

Call 643-0345.

Add another dimension to your outdoor living space — Nightscaping — a dramatic low voltage lighting system. Our staff has been trained to develop complimentary lighting for your garden. Nightscaping is safe, easy to install and economical to operate. Call **J. Franklin Styer Nurseries**, Concordville, PA. Telephone 459-2400.

AMERICAN GREENHOUSE

Building and Maintenance Company

Complete Greenhouse Service including:

- Painting
- Reglazing
- Repairs — Small or Large
- Installations
- Dismantling & Re-erection
- Insurance Estimates

Services available for MD, VA, DE, PA, NJ, CT, NY and New England.

Greenhouses and Solariums.

Check our quotes before you buy.

147 South Delsea Drive

Vineland, NJ 08360

(609) 692-7500

CLASSIC ENGLISH AND AMERICAN GARDEN FURNITURE

Solid teak, iroko, cherry and oak hardwoods — traditional slatted **benches**, shrub tub **planters**, contemporary deck chairs, **SWINGS** — Victorian, traditional and contemporary styles. Catalog \$1.00. **COUNTRY CASUAL**, Suite 205, 17317 Germantown Rd., Germantown, MD 20874. (301) 540-0040.

MEADOWBROOK FARM

Cool down your summer garden with a fountain from Meadowbrook Farm. All shapes & sizes. Also, large assortment of statuary & decorative pots. Highlight your **party** with flowering patio pots & topiary. Remember — our large selection of **perennials & ornamental grasses** for sun or shade (300 varieties), trees, shrubs, and potted flowers available also. New **display garden** shows aesthetic use of perennials & grasses for every purpose. Nr. Jenkintown. 12 miles from center city.

Most inspired garden shop in the Delaware Valley

1633 Washington Lane

Meadowbrook, PA 19046

887-5900

ORTHO'S COMPUTERIZED GARDENING

Easy-to-use, personalized, computerized Plant Selector, Planning Calendar, Garden Diary, Plant Encyclopedia, Calculator & Notepad, with complete instruction book, Vegetable Planting Guide, Landscape Planner, Garden Guides & 192-page Gardening Techniques. Available for Apple IIc/e (64K), Macintosh (128K), IBM PC (128K) & Commodore 64. \$49.95 — mail/phone orders only. Visa, MasterCard & COD accepted (COD add \$2). Call (215) 363-8840.

CPG, Inc., 47-2A Marchwood Rd., Exton, PA 19341

FROM ENGLAND, rustic hand thatched bird houses and feeders; also cast aluminum reproductions of classic cast iron furniture. From Sweden, Armillary Sphere Sundials. Write for free brochures. **AUTUMN INNOVATIONS, INC.**, Box 18426, Greensboro, NC 27419.

Matched pair of English boxwoods. 4 ft. high x 4 ft. wide. Excellent specimens. Call 215-699-7671 for appointment.

AFRICAN VIOLETS

146 best violets and gesneriads. Beautiful color catalog including growing supplies, plus "Tips" on violet growing — 50¢. **Fischer Greenhouses**, Dept. S, Linwood, NJ 08221.

GREENHOUSE REPAIRS AND MAINTENANCE

Sales and Construction

GEORGE C. MATT, INC.

212 St. Georges Road, Ardmore, PA 19003

215-649-2745

OUTDOOR FURNITURE

To replace or recycle

Hill Co.

8615 Germantown Ave.

247-7600

We make your outdoor furniture look like new.

Herb Stories from Past Issues of Green Scene

If you would like to have a copy of any of the following stories, send \$1.00 and a self-addressed, stamped envelope to Audrey Manley at PHS, 325 Walnut Street, Philadelphia, PA 19106.

"Herbs in Winter," Barbara Bruno, Volume 4, No. 2 (Nov '75), page 13

"Herb Reigns Supreme," Jan Riemer, Volume 4, No. 5 (May '76), page 28

"Irises and Herbs: Pleasing Partners," Barbara Bruno, Volume 7, No. 5 (May '79), page 14

"A Healing Potion Wrapped in Green: Aloe vera," Jan Riemer, Volume 8, No. 3 (Jan '80), page 11.

"Marketing Herbs," Julianne Street, Volume 9, No. 1 (Sept. '80), page 4

"Getting More Mileage from Herbs," Julianne Street, Volume 9, No. 3 (Jan '81), page 18

"Preparing for Christmas in the Herb House," Julianne Street, Volume 10, No. 2 (Nov '81), page 3.

"A Second Story Windowbox for Herbs," Patricia Schrieber, Volume 10, No. 3 (Jan. '82), page 10

List researched by Audrey Manley

"Fresh Herbs for Restaurants in Winter And Any Other Time," Marcus Pollack, Volume 11, No. 3 (Jan '83), page 3

"Designing an Herb Garden," J. Liddon Pennock, Jr., Volume 11, No. 5 (May '83), page 32

"A Sure Sign of Spring: The Annual Herb Sale Anne Cunningham, Volume 13, No. 5 (May '85) page 3

INDEX

SUBJECT

A

- All Plants Wait for Something - Byrne ... Jan.,3
 American Women's Garden Book, PHS Members included in the - Byrne ... Jan.,3
 Antique Ornamentals: Endangered Cultivars that Give Perpetual Comfort and Delight, Searching for - Tucker ... May,8
 Arrangements for Public Places, Natural Selections: - Steele ... Sept.23
 Art of Pea-Staking Perennials, The - Cresson ... Mar.,22

B

- Basic Herb Gardening - Madara ... July,9
 Basil Madness, Letter to the Editor: More About - Zimmerman ... Sept.,34
 Beans, Shell - Chandoha ... May,24
 Beautifying Narberth Train Station - Eyster ... Mar.,31
 Bird Feeder, Coffee Can - Judge ... Jan.,34
 Blow Thou Winter Wind - Winter Composting - Roback ... Jan.,34
 Bulbs Quickly Around Trees, Planting - Schlufer ... Sept.,33
 Business of Propagating at Winterthur, The - Laird ... Sept.,9
 Business Sprouts in Wagontown, PA, A - Pepper ... May,12

C

- Carnivorous Jewel: *Drosera x 'Nagamoto,'* A Glistening - Knauff ... Sept.,17
 Carnivorous Plants: What Are They? What Do They Want? - Adams II ... Jan.,15
 Catalogs: An Idealist Becomes Skeptical, Reading Garden - McLean ... Mar.,3
 Centerpiece: One for the Guinness Book of Records, Please Eat the - Lindemann ... Sept.,12
 Christmas Mantle - Ward ... Nov.,21
 City Garden for All Reasons, Coming Down to Earth: A - Jarmusch ... Mar.,13
 City Garden, The International Garden at Franklin Town: A proving ground for plants in the city, A Newly Constructed - Meyer ... May,17
 City Gardens, The Survival of the Fittest: Tough Plants for - Schrieber ... Jan.,8
 City Lot, Coenosium Gardens: A Conifer Collection that Started on a - Loewer ... Jan.,20
 Coenosium Gardens: A Conifer Collection that Started on a City Lot - Loewer

Index to Volume 13, September 1984 through July 1985 (listing shows issue date and page number).

- ... Jan.,20
 Coffee Can Bird Feeder - Judge ... Jan.,34
 Coming Down to Earth: A City Garden for All Reasons - Jarmusch ... Mar.,13
 Composting, Blow Thou Winter Wind - Winter - Roback ... Jan.,34
 Confessions of a Latin Lover - Petersen ... Nov.,23
 Conifer Collection that Started on a City Lot, Coenosium Gardens: A - Loewer ... Jan.,20
 Containers, Growing Herbs in - Bonham, Jr. ... July,14
 Crafts - For Use for For Delight, Herb - Reppert ... July,37
 Creek's Changing Moods, Watching Red Clay - Darke ... Mar.,5
 (Culinary) Herbs: The Jewels of the Kitchen - Street ... July,4

D

- Daffodils, Raising Distinctive - Krahmer ... Mar.,24
 Decorations, Tree - Kosta ... Nov.,18
 Decorative Yams as Houseplants - Elbert ... Nov.,7
 Deer, Letter to the Editor: Tuning Out the - Raden ... Sept.,34
 Deerfield, The Maze at - Fell ... Jan.,4
 Design on Herbs - Lindemann ... July,30
Dracena fragrans 'Massangeana' - Mammarelli ... Sept.,33
 Dried Herb and Flower Wreath - Flounders ... Nov.,14
Drosera x 'Nagamoto,' A Glistening Carnivorous Jewel: - Knauff ... Sept.17

E

- Edibles and Ornamentals, Strange Bedfellows - Hyland ... May,28
 Editorials: All Plants Wait for Something - Byrne ... Jan.,3; American Women's Garden Book, PHS members included in the - Byrne ... Jan.,3; Goodbye to a Prince Among Printers - Byrne ... Nov.,3; What is a Herb? - Howard ... July,3; Why Perennials? - Byrne ... Sept.,3
 Everlasting Wreath - Comly ... Nov.,19
 Exotica in the Italian Market - Archer ... Jan.,12

F

- Fairy Rose, The - Reppert ... Jan.,28
 Farming: More Than It's Cracked Up To Be, Grain - Hunt ... Sept.,14
 Four Favorite Perennials for the Shady Garden - Derbyshire ... May,26

G

- Garden Invaders, Letters to the Editor: - Schroeder ... Mar.,30
 Glistening Carnivorous Jewel: *Drosera*

- x 'Nagamoto,'* A - Knauff ... Sept.,17
 Goodbye to a Prince Among Printers - Byrne ... Nov.,3
 Grain Farming: More Than It's Cracked Up To Be - Hunt ... Sept.,14
 Grass, Letter to the Editor: Liriope - Not a - Derbyshire and Darke ... Nov.,27
 Greenhouse: A Not Entirely Sunny Story with a Happy Ending, A Solar - Wetzel ... Sept.,4
 Growing Herbs in Containers - Bonham, Jr. ... July,14
 Growing Orchids in the Windows - Medeiros ... Mar.,27

H

- Happy Accidents: Hardy Houseplants in the Garden - Tucker ... Sept.,19
 Help Me Make It Through the Winter (Herbs) - Douglas ... July,23
 Herb and Flower Wreath, Dried - Flounders ... Nov.,14
 Herb Crafts - For Use or For Delight - Reppert ... July,37
 Herb?, Editorial: What is a - Howard ... July,3
 Herb Gardening, Basic - Madara ... July,9
 Herb Gardens, Lay Down Your Trowel and Clippers and Visit Some - Reed ... July,19
 Herb Habit in History, Starting the - Walker ... July,8
 Herb Sale, A Sure Sign of Spring: The Annual - Cunningham ... May,3
 Herbals - Of Virtues and Violets - Morris ... July,34
 Herbs - A Collection of Articles from Past Issues of *Green Scene*, - Manley ... July,42
 Herbs: Books, Periodicals, Nurseries and Seed Sources, Resources for - Mary Lou Wolfe ... July,33
 Herbs, Design on - Lindemann ... July,30
 Herbs: Good Medicine or Bad - ... Jarmusch ... July,26
 (Herbs), Help Me Make It Through the Winter - Douglas ... July,23
 Herbs in Containers, Growing - ... Bonham, Jr. ... July,14
 Herbs: The Jewels of the Kitchen - Street ... July,4
 History, Starting the Herb Habit in - Walker ... July,8
 Hosta Names, Letter to the Editor: - Pollock ... Nov.,26
 Houseplants, Decorative Yams as - Elbert ... Nov.,7
 Houseplants in the Garden, Happy Accidents: Hardy - Tucker ... Sept.,19

I

- Intensive Vegetable Gardening, A Lot for Less: - Ballard ... Mar.,17
 International Garden at Franklin Town:

- A proving ground for plants in the city, A Newly Constructed City Garden, The - Meyer ... May,17
 Italian Market, Exotica in the - Archer ... Jan.,12

J

- Jasmines, The Sweet Scent of - Niedz ... Sept.,30

L

- Landscaping for Security: Burglar-Proofing Your Home with Plants - Ascher ... Sept.,27
 Latin Lover, Confessions of a - Petersen ... Nov.,23
 Lay Down Your Trowel and Clippers and Visit Some Herb Gardens - Reed ... July,19
 Letters to the Editor: Garden Invaders - Schroeder ... Mar.,30; Hosta Names - Pollock ... Nov.,26; Kudos for Perennial Issue - Cowan ... Sept.,34; Kudos for Plant Finder - Tyson ... Sept.,34; Liriope - Not a Grass - Darke and Derbyshire ... Nov.,27; More About Basil Madness - Zimmermann ... Sept.,34; Perennials - Raden ... Nov.,26; Tuning Out the Deer - Raden ... Sept.,34
 Lilies, Windus - Andersen ... May,14
 Liriope - Not a Grass: Letter to the Editor - Darke and Derbyshire ... Nov.,27
 Lot for Less: Intensive Vegetable Gardening, A - Ballard ... Mar.,17

M

- Mantle, Christmas - Ward ... Nov.,21
 Maze at Deerfield, The - Fell ... Jan.,4
 Medicine or Bad, Herbs: Good - Jarmusch ... July,26
 Metasequoia: Re-established in North America After a 13 Million Year Absence - Hamilton ... Nov.,30
 More About Basil Madness, Letter to the Editor - Zimmerman ... Sept.,34

N

- Narberth Train Station, Beautifying - Eyster ... Mar.,31
 Natural Selections: Arrangement for Public Places - Steele ... Sept.,23
 Nature's Wonderful Mysteries: the Disparities Between Science and My Uncle Tom's Explanations - Berg ... Nov.,28

O

- Orchids in the Windows, Growing - Medeiros ... Mar.,27
 Ornamentals: Endangered Cultivars that Give Perpetual Comfort and Delight, Searching for Antique - Tucker ... May,8
 Ornamentals, Strange Bedfellows: Edibles and - Hyland ... May,28

P

Paca Garden in Annapolis Steps Back in Time, The William - Ascher ... May,21
 Pea-Staking Perennials, The Art of - Cresson Mar.,22
 Perennial Issue, Letter to the Editor: Kudos for the - Cowan ... Sept.,34
 Perennials, Letter to the Editor: - Raden Nov.,26
 Perennials?, Editorial: Why - Byrne ... Sept.,3
 Perennials for the Shady Garden, Four Favorite - Derbyshire May,26
 Perennials, The Art of Pea-Staking - Cresson Mar.,22
 Plant Finder, Letter to the Editor: Kudos for - Tyson Sept.,34
 Plant Shadow Pictures - Bruno ... Nov.,11
 Planting Bulbs Quickly Around Trees - Sciufer Sept.,33
 Please Eat the Centerpiece: One for the Guinness Book of Records - Lindemann Sept.,12
 Propagating at Winterthur, The Business of - Laird Sept.,9
 Pumpkins and Winter Squashes, Storing - Chandoha Nov.,4

R

Raising Distinctive Daffodils - Krahmer ... Mar.,24
 Reading Garden Catalogs: An Idealist Becomes Skeptical - McLean ... Mar.,3
 Red Clay Creek's Changing Moods, Watching - Darke Mar.,5
 Resources for Herbs: Books, Periodicals, Nurseries and Seed Sources - Wolfe July,33
 Riverside Gardening in Sand and Wind - Borie Jan.,24
 Rose, The Fairy - Reppert ... Jan.,28

S

Sand and Wind, Riverside Gardening in - Borie Jan.,24
 Santa's Snack - Lea Nov.,20
 Searching for Antique Ornamentals: Endangered Cultivars that Give Perpetual Comfort and Delight - Tucker ... May,8
 Searching for New Strawflowers: A colorful quest - Day Mar.,10
 Security: Burglar-Proofing Your Home with Plants, Landscaping for - Ascher ... Sept.,27
 Seeds of the Season, A Wintry Look at - diSciullo Nov.,17
 Shady Garden, Four Favorite Perennials for the - Derbyshire ... May,26
 Shell Beans - Chandoha May,24
 Shrub Divided Makes Two, A - Thomas ... May,31
 Solar Greenhouse: A Not Entirely Sunny Story with a Happy Ending, A - Wetzel Sept.,4
Spigelia marilandica: A Southern Beauty - Sawyers May,33
 Sprouts in Wagontown, PA, A Business - Pepper May,12
 Squashes, Storing Pumpkins and Winter - Chandoha Nov.,4
 Staking Perennials, The Art of Pea - Cresson Mar.,22
 Starting the Herb Habit in History - Walker July,8
 Storing Pumpkins and Winter Squashes - Chandoha Nov.,4
 Strange Bedfellows: Edibles and Ornamentals - Hyland May,28
 Strawflowers: A colorful quest, Searching for New - Day Mar.,10
 Sure Sign of Spring: The Annual Herb Sale, A - Cunningham May,3
 Survival of the Fittest: Tough Plants for City Gardens, The - Schrieber ... Jan.,8
 Sweet Scent of Jasmine, The - Niedz ... Sept.,30

T

Teasel - Vassalluzzo Nov.,15
 Train Station, Beautifying Narberth - Eyster Mar.,31
 Tree Decorations - Kosta Nov.,18
 Trees, Planting Bulbs Quickly Around - Sciufer Sept.,33

V

Vegetable Gardening, A Lot for Less: Intensive - Ballard Mar.,17

W

Watching Red Clay Creek's Changing Moods - Darke Mar.,5
 What is a Herb - Howard July,3
 Why Perennials? - Byrne Sept.,3
 William Paca Garden in Annapolis Steps Back in Time, The - Ascher ... May,21
 Windows, Growing Orchids in the - Medeiros Mar.,27
 Windus Lilies - Andersen May,14
 Winter Composting, Blow Thou Winter Wind - Roback Jan.,34
 Winterthur, The Business of Propagating at - Laird Sept.,9
 Wintry Look at Seeds of the Season, A - diSciullo Nov.,17
 Witch-Hazel's Weird but Wonderful Relatives: A Gardener's Perspective - Meyer Lewandowski Jan.,30
 Wreath, A Year-Round - Simonin ... Nov.,17
 Wreath, Dried Herb and Flower - Flounders Nov.,14
 Wreath, Everlasting - Comly ... Nov.,19

Y

Yams as Houseplants, Decorative - Elbert Nov.,7
 Year-Round Wreath, A - Simonin ... Nov.,17

AUTHORS

A

Adams II, Richard M. - Carnivorous Plants: What Are They? What Do They Want Jan.,15
 Andersen, Kathryn - Windus Lilies ... May,14
 Archer, Charlotte - Exotica in the Italian Market Jan.,12
 Ascher, Amalie Adler - Landscaping for Security: Burlar-Proofing Your Home with Plants ... Sept.,27
 The William Paca Garden in Annapolis Steps Back in Time ... May,21

B

Ballard, Ernesta D. - A Lot for Less: Intensive Vegetable Gardening ... Mar.,17
 Berg, Marvin - Nature's Wonderful Mysteries: The Disparities Between Science and My Uncle Tom's Explanations Nov.,28
 Bonham, Jr., J. Blaine - Growing Herbs in Containers July,14
 Borie, Jane C. - Riverside Gardening in Sand and Wind Jan.,24
 Bruno, Barbara - Plant Shadow Pictures Nov.,11
 Byrne, Jean - American Women's Garden, PHS Members included in ... Jan.,3
 Editorials: All Plants Wait for Something ... Jan.,3
 Goodbye to a Prince Among Printers ... Nov.,3
 Why Perennials? ... Sept.,3

C

Chandoha, Walter - Shell Beans ... May,24
 Storing Pumpkins and Winter Squashes ... Nov.,4
 Comly, Georgie - Everlasting Wreath ... Nov.,19
 Cowan, Edna L. - Letter to the Editor:

Kudos for Perennial Issue ... Sept.,34
 Cresson, Charles O. - The Art of Pea-Staking Perennials Mar.,22
 Cunningham, Anne S. - A Sure Sign of Spring: The Annual Herb Sale ... May,3

D

Darke, Rick - Letter to the Editor: Liriope - Not a Grass ... Nov.,27
 Watching Red Clay Creek's Changing Moods ... Mar.,5
 Day, Bonnie J. S. - Searching for New Strawflowers: A colorful quest ... Mar.,10
 Derbyshire, Betty - Four Favorite Perennials for the Shady Garden ... May,26
 Letter to the Editor: Liriope - Not a Grass ... Nov.,27
 diSciullo, Helene K. - A Wintry Look at Seeds of the Season Nov.,17
 Douglas, Joyce - Help Me Make It Through the Winter (Herbs) ... July,23

E

Elbert, George - Decorative Yams as Houseplants Nov.,7
 Eyster, J. Jeffries - Beautifying Narberth Train Station Mar.,31

F

Fell, Derek - The Maze at Deerfield ... Jan.,4
 Flounders, Ruth - Dried Herb and Flower Wreath Nov.,14

H

Hamilton, DeWitt - Metasequoia: Re-established in North America After a 13 Million Year Absence ... Nov.,30
 Howard, Nancy - Editorial: What is a Herb? July,3
 Hunt, Marjorie - Grain Farming: More Than It's Cracked Up to Be ... Sept.,14
 Hyland, Bob - Strange Bedfellows: Edibles and Ornamentals May,28

J

Jarmusch, Ann - Coming Down to Earth: A City Garden for All Reasons ... Mar.,13
 Herbs: Good Medicine or Bad ... July,26
 Judge, Marie Burns - Coffee Can Bird Feeder Jan.,34

K

Knauff, Patricia A. - A Glistening Carnivorous Jewel: *Drosera x 'Nagamoto'* ... Sept.,17
 Kosta, Rose - Tree Decorations ... Nov.,18
 Krahmer, Betty P. - Raising Distinctive Daffodils Mar.,24

L

Laird, Marnie - The Business of Propagating at Winterthur Sept.,9
 Lea, Gretchen - Santa's Snack ... Nov.,20
 Lewandowski, Rick and Meyer, Paul - Witch-Hazel's Weird but Wonderful Relatives: A Gardener's Perspective ... Jan.,30
 Lindemann, Ed. - Design on Herbs ... July,30
 Please Eat the Centerpiece: One for the Guinness Book of Records ... Sept.,12
 Loewer, Peter - Coenosium Gardens: A Conifer Collection that Started on a City Lot Jan.,20

M

Madara, Rosalinda - Basic Herb Gardening July,9
 Mammarella, Harriet - *Dracaena fragrans* 'Massangeana' Sept.,33
 Manley, Audrey - Herbs - A Collection of Articles from Past Issues of *Green Scene* July,42
 McLean, Elizabeth P. - Reading Gar-

den Catalogs: An Idealist Becomes Skeptical Mar.,3
 Medeiros, Jerry - Growing Orchids in the Windows Mar.,27
 Meyer, Paul and Lewandowski, Rick - Witch-Hazel's Weird but Wonderful Relatives: A Gardener's Perspective ... Jan.,30
 Meyer, Paul - International Garden at Franklin Town: A proving ground for plants in the city May,17
 Morris, Julie - Herbs - Of Virtues and Violets July,34

N

Niedz, Franklin J. - The Sweet Scent of Jaminas Sept.,30

P

Pepper, Jane - A Business Sprouts in Wagontown, PA May,12
 Petersen, Jody - Confessions of a Latin Lover Nov.,23
 Pollock, Warren - Letter to the Editor: Hosta Names Nov.,26

R

Raden, Lee M. - Letter to the Editor: Perennials ... Nov.,26
 Tuning Out the Deer ... Sept.,34
 Reed, Joanna - Lay Down Your Trowel and Clippers and Visit Some Herb Gardens July,19
 Reppert, Bertha - Herb Crafts - For Use or For Delight ... July,37
 The Fairy Rose ... Jan.,28
 Roback, Helen M. - Blow Thou Winter Wind - Winter Composting ... Jan.,34

S

Sawyers, Claire - *Spigelia marilandica*: A Southern Beauty May,33
 Schrieber, Patricia - The Survival of the Fittest: Tough Plants for City Gardens Jan.,8
 Schroeder, Gilliat G. - Letter to the Editor: Garden Invaders Mar.,30
 Sciufer, Nicholas - Planting Bulbs Quickly Around Trees Sept.,33
 Simonin, Ginny - A Year-Round Wreath ... Nov.,17
 Steele, Lucie B. - Natural Selections: Arrangements for Public Places ... Sept.,23
 Street, Julianne R. - Herbs: The Jewels of the Kitchen July,4

T

Thomas, Bill - A Shrub Divided Makes Two May,31
 Tucker, Arthur O. - Happy Accidents: Hardy Houseplants in the Garden ... Sept.,19
 Searching for Antique Ornamentals: Endangered Cultivars that Give Perpetual Comfort and Delight ... May,8
 Tyson, Patricia - Letter to the Editor: Kudos for Plant Finder Sept.,34

V

Vassalluzzo, Rosemarie P. - Teasel ... Nov.,15

W

Walker, Elizabeth C. - Starting the Herb Habit in History July,8
 Ward, Jane - Christmas Mantle ... Nov.,21
 Wetzel, Carroll R. - A Solar Greenhouse: A Not Entirely Sunny Story with a Happy ending Sept.,4
 Wolfe, Mary Lou - Resources for Herbs: Books, Periodicals, Nurseries, and Seed Sources July,33

Z

Zimmerman, L. Wilbur - Letter to the Editor: More About Basil Madness ... Sept.,34



Lee Estler, supervisor of the Herb House at Apple Pie Farm, works with chervil, sweet basil, purple basil, Italian parsley and tarragon. See story on page 4.





PENNSYLVANIA HORTICULTURAL SOCIETY



3 1827 00018562 8

